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Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes on his mission to Sierra Leone*

Note by the Secretariat

The Secretariat has the honour to transmit to the Human Rights Council the report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes on his mission to Sierra Leone. In his report, submitted pursuant to Human Rights Council resolution 27/23, the Special Rapporteur shares findings and recommendations derived from his official country visit.

* The present report was submitted after the deadline in order to reflect the most recent information.

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** Circulated in the language of submission only.

I. Introduction

1. The Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes conducted an official visit to Sierra Leone at the invitation of the Government, from 14 to 25 August 2017. The purpose of this visit was to monitor and assess steps taken by the Government to protect the human rights associated with the management of hazardous substances and wastes throughout their life cycle.

2. The Special Rapporteur expresses his deepest gratitude to the Government of Sierra Leone for its invitation. He commends the exemplary cooperation extended by those involved despite the national emergency resulting from the floods and landslides affecting Freetown and surrounding areas on 14 August 2017. The Special Rapporteur reiterates his heartfelt condolences to the families of the victims.

3. During the visit, the Special Rapporteur had the honour to meet with the President, Ernest Bai Koroma, representatives of different ministries, departments and agencies of the central Government, the Human Rights Commission of Sierra Leone, the police, business enterprises, civil society representatives, local officials, traditional leaders and communities in both urban and rural settings. The Special Rapporteur met with representatives of the international community, including the United Nations country team. He thanks the Resident Coordinator and the personnel of the United Nations Development Programme (UNDP) for facilitating his visit, and also thanks all the civil society organizations, business enterprises and individuals with whom he met for their time and cooperation and for sharing information on their views and experiences.

4. The Special Rapporteur met with local communities in Freetown, Bo and Makeni and in the districts of Pujehun and Kono. He visited a large-scale palm plantation of the Société financière des caoutchoucs (Socfin), a Luxembourg-based company that operates in multiple African countries. The company's plantation and processing plant stretch over 18,000 ha of land in the Pujehun District. The Special Rapporteur also visited the Koidu Kimberlite Project, a mining site in the Kono District owned and operated by Koidu Limited, a private business enterprise owned by BSG Resources Limited through its subsidiary, OCTÉA Limited. During the visits, he met with local residents and workers, paying particular attention to issues related to the management of solid waste and to the impact of activities of the agriculture and mining sectors on workers and communities. He is grateful to those who made time to meet with him and discuss the challenges, opportunities and desires in relation to the mandate.

II. General context

5. Sierra Leone has made significant advancements in the promotion of peace, democracy and economic development since the end of the civil war in 2002.[1] While the outbreak of the Ebola virus disease in 2014 and the decline in the international price of iron ore in 2013 created a significant setback,[2] economic growth has resumed, supported, in particular, by investments in the mining and agriculture sectors.

6. Sierra Leone has potential for significant economic expansion despite acute socioeconomic challenges. Although, according to a report entitled *African Economic Outlook 2017: Entrepreneurship and Industrialisation*, the country is currently the 154th economy in the world and the 38th in Africa, it has one of the largest ports in the region and vast water resources and fertile soils with potential for agriculture, fishing and tourism. It is also among the top 10 diamond-producing countries in the world, is one of the largest rutile

[1] See www.sl.undp.org/content/sierraleone/en/home/countryinfo.html.

[2] Authorities estimate that there was a 50 per cent rate of job loss in the private sector, while agricultural and manufacturing outputs declined by 30 per cent and 60 per cent, respectively; Sierra Leone, *National Ebola Recovery Strategy for Sierra Leone 2015–2017* (2015).

and bauxite producers, is a major producer of gold and has the second largest iron ore deposits in the world.

7. Poverty remains a central concern. In a report in 2011 by the Wye City Group of the Food and Agriculture Organization of the United Nations (FAO) entitled "Agricultural and rural development statistics in Sierra Leone", it was estimated that about two thirds of the population lived in rural areas, of which about 70 per cent lived below the poverty line. According to the *Human Development Report 2016: Human Development for Everyone*, Sierra Leone is ranked quite low in the human development index, ranking 179th (out of 188), and in the gender inequality index, standing at 151. Despite remarkable strides and reforms, youth unemployment, corruption and shortcomings in fiscal policies and infrastructure are also commonly recognized among the challenges that Sierra Leone faces on its way to achieving sustainable development and effective protection and promotion of human rights.[3] Sierra Leone is classified by FAO as a low-income food-deficit country. It is estimated that nearly half of the population is food insecure.[4] Undernutrition is prevalent among children and pregnant women,[5] which can exacerbate the adverse impacts of their exposure to toxic chemicals. Maternal and infant mortality are among the highest in the world, as is the prevalence of major communicable diseases.[6] Air and water pollution contribute to poor health outcomes.[7] The availability of safe water and sanitation also remains an area of concern.

8. Most stakeholders acknowledge the increased need for rapid improvements in chemicals and waste management in Sierra Leone, in the light of the policy focus on economic prosperity highlighted in the Government's Agenda for Prosperity, the main policy document guiding government development initiatives between 2013 and 2018. Agriculture and mining are the main drivers for economic growth, and the Agenda for Prosperity, recognizing the elevated risks of pollution and contamination in these sectors, includes a specific pillar focusing on the need to address inadequate management of resources, gaps in norms and policies and insufficient cross-sectorial coordination. The success of development platforms, such as the success of the Agenda for Prosperity in achieving its goals of poverty reduction, is closely related to maintaining continued attention to sustainable development and human rights, including the effects of economic activities on public health and the environment, the adoption of regulations protecting workers and marginalized communities and the promotion of access to justice.

III. Governance

A. Relevant human rights obligations

9. Numerous civil, political, economic, social and cultural rights are associated with the management of toxics, and those rights are interlinked, interdependent and indivisible (see also A/HRC/36/41, para. 6). The fact that Sierra Leone has recognized and is committed to upholding its obligations regarding the protection from exposure to hazardous substances and wastes is confirmed by its participation in key international human rights, environment and labour treaties in these domains.

10. Sierra Leone has not ratified the optional protocols allowing for individual complaints regarding the International Covenant on Economic, Social and Cultural Rights, the Convention on the Rights of the Child or the Convention on the Elimination of All Forms of Discrimination against Women. During its last universal periodic review, Sierra Leone agreed without qualification to accede to or ratify various international instruments,

[3] See www.worldbank.org/en/country/sierraleone/overview.

[4] World Food Programme (WFP), "WFP Sierra Leone: country brief", July 2018.

[5] United Nations Children's Fund (UNICEF), "Sierra Leone: country programme document 2015–2018", 2014.

[6] See www.aho.afro.who.int/profiles_information/index.php/Sierra_Leone:Analytical_summary_-_Health_Status_and_Trends.

[7] World Health Organization (WHO), Country cooperation strategy 2017–2021: Sierra Leone (2017).

including these optional protocols. However, the ratification of the protocols had not been concluded at the time of writing the present report.

11. Sierra Leone is party to the main global treaties for chemicals and waste management. The country is party to the Stockholm, Basel and Rotterdam conventions and participated for the first time in the 2017 conferences of the parties to the conventions. Sierra Leone is also a party to the Minamata Convention. While a signatory since 2003, Sierra Leone has not yet ratified the Bamako Convention.

12. Thirty-five International Labour Organization (ILO) conventions, including on forced labour, freedom of association, right to organize and collective bargaining, equal remuneration, discrimination at work and child labour, have been ratified by Sierra Leone. However, it has not ratified several ILO conventions relevant to the protection of workers from hazardous substances.[8]

B. Mobilizing financial and technical resources and combating corruption

13. The Special Rapporteur notes the repeated recognition by government entities of the gaps in the regulation and oversights in the use of hazardous chemicals and the slow pace in reversing this scenario.

14. Low-income countries often cite lack of financial and technical resources as a primary challenge in protecting people against exposure to pollution, toxic industrial chemicals, pesticides and other hazardous substances that pose grave threats to life, health and other human rights. This truly is a challenge, but is completely within the control of Governments to rectify. Three factors predominate in cases where Governments are unable to mobilize financial resources for toxic pollution control and chemicals management: a misperception by States that the cost of action is either (a) unaffordable or (b) greater than the cost of inaction (see also A/HRC/36/41, para. 63) and (c) the failure to mainstream within development agendas.

15. Examining the situation in Sierra Leone, the Special Rapporteur concludes that the country should urgently take robust, positive action to increase financial resources for the control of hazardous substances and wastes. In particular, the country has potential for generating sustainable financing through cost-recovery systems, thereby bolstering the private sector's financial participation in meeting the costs of full implementation and enforcement of national laws concerning chemicals.[9] Sierra Leone should develop a strategy to implement cost-recovery systems and other appropriate mechanisms to increase financial resources and national capacity (see UNEP, *LIRA-Guidance*; SAICM/ICCM.4/6, annex, para. 85). All stakeholders in the national planning processes could be encouraged to integrate such systems to realize the economic benefits of providing resources for the sound management of hazardous substances and wastes. In doing so, they should consider mainstreaming and developing capacity for assessing the costs of inaction and the benefits of action on chemicals issues at the national, regional and global levels. The costs of monitoring and inspection, of technical capacity for risk assessments and of other necessary regulatory and enforcement activities could be further defrayed to support the development of a robust chemical management system (see also A/HRC/36/41, para. 65).

16. International cooperation, including financial and technical assistance, has also been provided to assist low-income countries in developing capacities needed to protect human rights associated with the management of toxic chemicals. The Special Rapporteur notes the support of other Governments and international organizations and institutions in assisting Sierra Leone. Waste management is one area that has received attention, although further action is needed, as described in section IV.C. The Special Rapporteur was informed of a project funded by the United Kingdom of Great Britain and Northern Ireland

[8] ILO conventions No. 155, No. 170, No. 174, No. 176, No. 184 and No. 187.

[9] United Nations Environment Programme (UNEP), *UNEP Guidance on the Development of Legal and Institutional Infrastructures and Measures for Recovering Costs of National Administration for Sound Management of Chemicals* (*LIRA-Guidance*) (2015).

to improve solid waste management, which was implemented first in 2014 in Bo, the country's second-largest city, then in Makeni. The project closed two years early, in 2016, when the activities were subsumed under a water, environment, sanitation and hygiene project.[10] As a result of this initiative, it is reported that the Bo and Makeni City Councils closed down a number of illegal dump sites in their municipalities. Given the economic and development situation of Sierra Leone, the Special Rapporteur acknowledges that many recommendations in the present report would strongly benefit from close and continued technical and financial support from the international community, particularly from home States of foreign business enterprises operating in Sierra Leone.

17. The Special Rapporteur feels obliged to note that while financial resources can advance protections from exposure to toxics, corruption poses a major challenge to utilizing these resources as intended.[11] While acknowledging that Sierra Leone has made some progress in combating corruption,[12] for example, by establishing and supporting its Anti-Corruption Commission, the Special Rapporteur notes that the problem persists.

18. Financial audits support the Government's effort to identify areas of improvement in cases where further reforms need to be implemented to ensure that public funds are used for their intended purposes. For example, in 2016, a government audit indicated that among other cash losses in the Government, the Ministry of Lands, Country Planning and the Environment had an estimated unaccounted revenue of 980,040,500 leones ($127,000). Furthermore, while there was a policy that 20 per cent of all fees collected for environmental impact assessment licences should be used for monitoring activities, the accounting records of the Environment Protection Agency showed that those revenues were not used exclusively for monitoring.[13] Sierra Leone should prioritize not only identifying gaps in public finance losses but also implementing legal and administrative measures to recoup funds, in this case to better finance the chemical and waste governance frameworks.

19. Business enterprises worldwide continue to gain profit at the expense of human beings; there have been instances in which victims of exposure to toxic chemicals resulting from highly profitable agriculture and mining activities have gone without compensation, financial or otherwise. Concerns about corruption have arisen in relation to allegations of conflict of interest regarding taxes and tax avoidance, resulting in situations where the costs of economic development are borne by the community while the benefits are claimed by the powerful elite. For example, residents from the Kono District complained of a lack of transparency and justice in the distribution of financial resources generated by the mining of diamonds on their land. In 2015, lawyers representing the mayor of Koidu city alleged in court that Koidu Limited had dodged local property taxes. Koidu maintained that it was exempt from taxes but that it was committed to its corporate social responsibilities. In 2016, the central Government suspended Mayor Lamina from office in what was allegedly a politically motivated act linked to his attempt to challenge Koidu. The High Court ruled that Koidu Limited and OCTÉA, Koidu's parent company, were separate entities and that OCTEA was therefore not technically the mine's owner and had no duty to pay property tax.

20. The Special Rapporteur is fully aware that the fight against corruption is a long-term process and that patience and persistence are crucial for producing results. At the same time, he warns that corrupt practices are threatening the governance framework on chemicals management, environmental protection and waste management and that the failure to address this may result in the most vulnerable, including the local community, having to pay for the adverse effects of such projects through loss of life, health and well-being. The Special Rapporteur therefore urges the Government to step up anti-corruption efforts in not only the mining sector but all areas of the private sector, especially those involving public and private entities. Implementing measures to address corruption would be an essential

[10] See https://devtracker.dfid.gov.uk/projects/GB-1-203636.

[11] World Bank, "Combating corruption", updated 4 October 2018; Sierra Leone, *Governance and Corruption Study* (2003). Available at http://siteresources.worldbank.org/INTANTICORRUPTION/Resources/383901-1317672198081/sl_gacreport.pdf.

[12] Anti-Corruption Commission, "The initiatives and practices of Sierra Leone's preventive anticorruption bodies as per article 6 of the UNCAC", 2014.

[13] Annual report of the Auditor General on the accounts of Sierra Leone 2016.

step towards recouping costs from industry for chemicals management and environmental protection and ensuring a more robust waste management system. Strong anti-corruption measures must accompany cost-recovery systems and other financial measures to ensure that resources are efficiently and appropriately allocated to protect the public against exposure to toxics.

C. Legislation and regulation

21. All States are duty-bound to establish legislative and regulatory frameworks to protect human rights from infringement as a result of the mismanagement of toxic chemicals and wastes. The failure to enact or enforce laws necessary to prevent the adverse impacts of hazardous substances on, inter alia, the rights to life, to health and to the integrity of the person is a violation of a State's obligations (see also A/HRC/36/41, para. 56). Sierra Leone is no exception to the global discrepancy between the standards of protection required to uphold human rights and the standards of protection established under legislation.

22. The Constitution of Sierra Leone reflects some critical human rights obligations. Although recognized as public policy goals in chapter II of the Constitution, economic, social and cultural rights do not enjoy the same constitutional protection afforded to civil and political rights at the national level. The Special Rapporteur is convinced that establishing constitutional rights and legislation of direct relevance to toxics would be a step in the right direction for the country. Discussions on the need to revise the Constitution have been ongoing since the end of the civil war. In 2013, a constitutional review committee was established, and it concluded its work with the publication of a final report in 2016.[14] In December 2017, the Government rejected 102 of the 138 recommendations made by the committee, including the recommendation concerning the recognition of economic and social rights in chapter II of the main law of the country. The Special Rapporteur believes that enhancing constitutional protection of economic, social and cultural rights would expand the possibilities of national courts to enforce some of the human rights most commonly affected by exposure to hazardous substances and wastes, such as the rights to health, food, safe drinking water and sanitation and a safe, clean, healthy and sustainable environment.

23. The Special Rapporteur encourages the Government to further the constitutional review in an inclusive manner in order to fulfil the obligation of Sierra Leone to protect human rights by promoting effective compliance and enforcement of laws. This goal could be achieved by revisiting key recommendations from the 2013 constitutional review, including the particular recommendation to make justiciable the fundamental principles of State policy as set out in chapter II of the Constitution by recognizing, at the national level, the rights to health, housing, water and sanitation, a healthy environment and gender equality, and the rights of children, the elderly and persons with disabilities. Those recommendations also included a provision for collective bargaining and security of tenure of union members, which would contribute to the democratization of trade unions. Abandoning recommendations related to labour and the rights of workers has cemented the current position whereby workers' rights are not adequately catered for in the Constitution. Sierra Leone is encouraged to recognize those rights at the constitutional level in order to advance efforts to promote the protection of workers, particularly in the context of exposure to hazardous substances and wastes. This would need to be supported by constitutional provisions for safeguards regarding the health, safety and welfare of all persons in employment, in particular working women with children, and a provision for adequate medical and health facilities for all persons, including workers.

24. The Special Rapporteur notes that various legal instruments to protect against exposure to hazardous substances and wastes in Sierra Leone were either in the process of

[14] Sierra Leone, *Report of the Constitutional Review Committee* (2016). Available at www.democracy.gov.sl/images/reports/REPORT%20OF%20THE%20CONSTITUTIONAL%20REVIEW%20COMMITTEE.pdf.

being developed or under review during his visit. He is convinced that addressing gaps in the national legal and policy framework would improve human rights protection in the country and encourages authorities to keep the momentum of drafting and adopting corresponding legal standards.

25. The main legal instrument governing the environmental protection sphere is the Environment Protection Agency Act, 2008. Human rights concerns related to exposure to hazardous substances and wastes, especially in the agriculture and mining sector, may be addressed through compliance mechanisms, including environmental impact assessments.[15] Following approval of an assessment prepared by the applicant, a licence is issued by the Environment Protection Agency. Some gaps have been reported in the licensing procedures, which are discussed in relation to monitoring in paragraph 42.

26. The Special Rapporteur encourages Sierra Leone to fulfil its obligations to protect health, safety and life by establishing and implementing an appropriate regulatory regime on pesticides, as well as adequate compliance and enforcement systems. Without these mechanisms in place, the main burden of the negative effects of pesticides is felt by workers, children and other vulnerable members of the community (see A/HRC/34/48, para. 70).

27. To reduce the dangers of hazardous pesticide use, which the Government acknowledges is a problem regarding food and water contamination, several policies, laws and guidelines are pending in a draft or review process and awaiting adoption.[16] The Special Rapporteur was informed that an inventory of pesticides had been conducted in 2008 and was being updated at the time of his visit. A list of banned pesticides was prepared in 2010. At present, the ban is limited to pesticides referred to in the Stockholm Convention.

28. Concerns about the mining sector are raised in the context of the existing legal and institutional framework. In 2007, a review of all mining agreements in the country was carried out by authorities and the normative framework was reformed. Mining activities are currently regulated in Sierra Leone by the Mines and Minerals Act, 2009, which is supplemented by the Environment Protection (Mines and Minerals) Regulations, 2013, and the Mines and Minerals Operational Regulations, 2013.

29. The Government has developed policy initiatives aimed at promoting sustainable waste management, including the Integrated National Waste Management Policy and the Integrated National Waste Management Strategic Plan, 2012–2016. In 2014, the National Policy Road Map on Integrated Waste Management for 2015 and beyond was also launched.

30. Significant gaps exist in the normative framework regarding labour despite periodic efforts to take into account developments in international human rights law.[17] For example, the main employment laws in place do not make specific reference to the right of all persons to work in safe and healthy conditions.

31. The Environment Protection Agency is the primary authority on human rights protection in the context of exposure to hazardous substances and wastes in Sierra Leone. The agency is mandated to coordinate, monitor and evaluate the implementation of national environmental policies, including issuing and monitoring compliance with the terms and conditions of environmental impact assessment licences, as well as ensuring enforcement in cases of non-compliance. The Ministry of Health and Sanitation is the main authority monitoring the direct impact of hazardous substances on human health. The National Minerals Agency, established in 2012, is responsible for the enforcement of the Mines and Minerals Act, 2009, and the implementation of policies formulated by the Ministry of Mines and Mineral Resources. A Minerals Advisory Board, an interministerial committee

[15] Section 131 of the Mines and Minerals Act, 2009, stipulates the requirement for both small- and large-scale mining projects to obtain an environmental impact assessment licence.

[16] A draft phytosanitary and pest control act, updating the Phytosanitary and Plant Import Act, 1974; a draft food bill and a food safety bill; draft regulations on toxic and hazardous substances; guidelines for sustainable agriculture; and a national integrated pesticides management policy.

[17] For example, the ILO Declaration on Fundamental Principles and Rights at Work, para. 2.

responsible mainly for recommendations on mineral policies, was established in 1994. In agriculture, the lead authority is the Ministry of Agriculture, Forestry and Food Security, which, together with the Ministry of Trade and Industry, has introduced plans to establish a crop protection unit within the Ministry of Agriculture mandated to manage pesticides, as well as all other issues related to agrochemicals.[18] At the time of writing, the unit had not yet been established.

32. The waste management sector presents a clear example of the multiplicity of government agencies involved and the lack of coordination of oversight and compliance mechanisms. For instance, the Ministry of Health and Sanitation is responsible for policy issues relating to solid waste, the Environment Protection Agency controls waste management facilities and deals with e-waste and hazardous waste, the Ministry of Local Government and Rural Development is responsible for municipal solid waste services in general and the city councils are in charge of such services in their respective areas, for example, the Freetown City Council is responsible for solid waste management services in Freetown. In an attempt to promote inter-agency collaboration, a proposal was made in the National Policy Road Map on Integrated Waste Management to establish a National Waste Management Working Group, led by the Ministry of Health and Sanitation and the Environment Protection Agency, in order to improve coordination and regulation efforts.

33. The Special Rapporteur notes that further efforts are needed to develop a harmonized system to address the overlapping roles and responsibilities of government agencies and the various elements of the institutional framework on issues related to hazardous substances and wastes. Efforts should be pursued to establish effective governance structures and practices that are needed to ensure clear decision-making authority, clarity of roles, responsibilities and relationships between institutional actors and public accountability. While institutional capacity-building is necessary and needs to be a continuous process, coordination must be improved to strengthen efficiency and transparency. Clarity and coherence in the allocation of mandates among public bodies is a key to efficiency and cost-effectiveness. Clear legal mandates lay the foundation for the overall organization of institutional arrangements, while the provision of adequate powers and resources to the responsible authorities ensures their ability to fulfil their mandates.[19]

34. One approach for optimizing the allocation of mandates to public bodies would be to concentrate them among fewer public agencies. This would mean identifying areas of duplication, gaps or cases where there is a lack of clarity of responsibility and exploring opportunities for improved synergies. A careful assessment of the advantages and drawbacks of different approaches (including costs and benefits) to harmonizing the regulatory system, especially in relation to chemicals and wastes, is highly advisable in the context of existing governance mechanisms in Sierra Leone.[20]

D. Monitoring

35. In order to protect human rights affected by toxics, States are duty-bound to generate, collect, assess and update information; effectively communicate such information, particularly to those disproportionately at risk of adverse impacts; ensure that confidentiality claims are legitimate; and engage in international cooperation to ensure that foreign Governments have the information necessary to protect the rights of people in their territories (see also A/HRC/30/40, para. 99). The Special Rapporteur observes that in this area as well, Sierra Leone has considerable room for improvement, especially regarding issues of transparency, access to information and meaningful participation of affected communities in the realization of large-scale projects.

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[18] World Trade Organization, "Trade policy review: Sierra Leone", WT/TPR/S/303/Rev.1; see also Ministry of Agriculture, Forestry and Food Security, *Smallholder Commercialization and Agribusiness Development Project (SCADEP): Final Report*, 2015. Establishment is envisioned under the draft phytosanitary and pest control act.

[19] See UNEP, *LIRA-Guidance*.

[20] Ibid.

36. The enjoyment of the right to information in the context of toxics is crucial in order to prevent adverse impacts, ensure freedom of expression and enable individuals and communities to participate in decision-making processes and seek and obtain remedy (see also A/HRC/36/41, para. 20).

37. Sierra Leone adopted the Right to Access Information Act, 2013, for the disclosure of information held by public authorities or by persons providing services for them. While this is a welcome development, efforts for the timely dissemination of information on the development and implementation of extractive industry projects should be reinforced. A 2014 study, entitled *Sierra Leone: Justice Sector and the Rule of Law*, indicated that only about 30 per cent of people in Sierra Leone were informed of their rights, and the rate was even lower in poor and rural communities. Existing legislation should be expanded to ensure that those affected by mining projects are fully informed of the mining activities and resulting consequences. Transparency is important to mitigate the risk of corruption, environmental damage and abuses against impoverished communities.

38. The right to information is crucial for the realization of the right to participation. State and business enterprises should ensure that communities are provided with adequate information on extractive activities occurring in their area of residence and on the potential impacts of these operations. Unfortunately, this does not seem to be a widespread practice in Sierra Leone. Several affected communities informed the Special Rapporteur that their views were not being sufficiently taken into account; information, particularly on health impacts, was unavailable, inaccurate or too technical; and processes for gathering information were not reasonably accessible (see also A/HRC/36/41, para. 23). Communities neighbouring large-scale mining projects should be consulted during the preparation of social and environmental risk assessments and should also receive the completed evaluations. Authorities should proactively make information accessible to affected communities and organize local spaces for information-sharing. In addition, business enterprises should work with local leaders to create grievance mechanisms.

39. The State should improve upon the quantity and quality of medical information gathered on affected populations to better ensure adequate health monitoring and record-keeping. This information is crucial for establishing or excluding correlations between mining activities and reported health outcomes. The Special Rapporteur recommends that the Government prioritize data collection and the analysis of health indicators.

40. National human rights institutions can play a key role in monitoring human rights and disseminating information. When provided with the necessary funds and autonomy to work (see also A/HRC/25/55), such institutions can ensure that communities are involved in decision-making processes. The Human Rights Commission of Sierra Leone, established in 2004, was accredited in 2011 with "A" status by the International Coordinating Committee of National Institutions for the Promotion and Protection of Human Rights, based in Geneva. The Human Rights Commission has a mandate to promote and protect human rights in the country, including through monitoring and investigative activities. The Special Rapporteur was informed of awareness-raising activities undertaken by the Commission, such as the development of the *Guidelines for Monitoring Business and Human Rights in Sierra Leone*. He was also informed that at the time of the visit the Commission was considering publishing an annual report devoted to business-related human rights issues.

41. The Human Rights Commission of Sierra Leone has performed commendable work in promoting human rights. However, civil society organizations and residents in communities visited by the Special Rapporteur noted the need for the Commission to further develop its capacity and independence by securing cooperation from business enterprises in human rights monitoring. Thus, the Special Rapporteur echoes the recommendations made by the Human Rights Committee in 2014 (CCPR/C/SLE/CO/1), as well as those made in the context of the 2016 universal periodic review (A/HRC/32/16), encouraging the Government to ensure adequate resourcing for and the full independence of the Commission.

42. The Special Rapporteur notes that more robust data are required than the data currently provided under approval and monitoring procedures to ascertain the safety

situation of workers, communities and the environment. For example, while business enterprises need to disclose in their quarterly reports to the Environment Protection Agency the pesticides that they use, the Agency informed the Special Rapporteur of the challenges it faced in analysing and testing pesticides. One of the applications for an environmental impact assessment licence examined by the Special Rapporteur in relation to Socfin's large-scale palm oil plantation failed to include an accurate list of pesticides and other agrochemicals envisaged to be used on the plantation and did not provide exhaustive information on several other key processes that could pose risks to human health and the environment, including the handling, transportation, application, storage and disposal of pesticides.[21] This lack of detail fundamentally thwarts the ability of the Agency to perform its duties under human rights law and fails to respect the rights of workers and local communities to information, participation and remedy. Despite those concerns, Socfin received its licence. The Special Rapporteur urges State authorities, including the Agency, to review the requirements for obtaining an environmental impact assessment licence according to the different sectors of the economy for which such a licence is sought, in order to take into consideration social aspects of projects, including the health impacts of exposure to toxics as a result of the applicant's activities.

43. Improved capacity for monitoring the use and assessing the impact of chemicals in agriculture and other economic activities may mitigate challenges with respect to regulations and the institutional framework. In the absence of a public laboratory facility for the monitoring of pesticide residues in food, water and the environment, the level of pesticide use in the country has not been fully studied and therefore is highly likely to be underestimated. Estimates are based on limited information on government supplies and the economic status of the farmers.[22]

E. Judicial system and enforcement

44. States and other duty bearers must be answerable to rights holders for the observance of human rights associated with the management of toxics. In this regard, all countries are expected to comply with the legal norms and standards enshrined in international human rights instruments. Every rights holder is entitled to initiate proceedings for appropriate redress before a competent court or other adjudicator, in accordance with the rules and procedures provided by law. States must ensure access to justice and provide effective remedies and restitution to victims of violations occurring as a result of exposure to hazardous chemicals (see also A/HRC/36/41, para. 17).

45. Most victims of toxics have no access to justice, nor are they aware of effective remedies, and most perpetrators of violations relating to toxics are not held accountable. The burden of proving the cause of illness, the lack of information, the insurmountable costs of judicial remedy, corporate structures, global and devolved supply chains and other factors obstruct the path to justice and remedy for most victims (ibid., para. 18). The Special Rapporteur notes in particular that in Sierra Leone no cases dealing specifically with pollution, contamination and exposure to hazardous substances and wastes have been brought by victims to the courts.

46. The Special Rapporteur welcomes the establishment of the Legal Aid Board in 2012 to provide legal aid services to indigent persons, as well as the Judicial and Legal Training Institute to ensure legal education within the justice sector. He recommends that the Government, together with the Human Rights Commission of Sierra Leone and civil society, carry out education and information campaigns to increase awareness of existing remedies and ways to use them. The Special Rapporteur wishes to stress that while access

[21] Joan Baxter, *Who is Benefitting? The Social and Economic Impact of Three Large-Scale Land Investments in Sierra Leone: A Cost-Benefit Analysis* (Action for Large-scale Land Acquisition Transparency, July 2013).

[22] Sankoh Alhaji Ibrahim, "An assessment of pesticide use, contamination and impact on the environment and the health of people in Sierra Leone", PhD thesis, Lancaster University, September 2016.

to remedies entails improving access to judicial and adjudicatory mechanisms, effective remedies are also required.

47. The Special Rapporteur takes note of the Environment Protection Agency's informal role in receiving and addressing people's complaints on matters relating to the environment. He encourages the Agency to create a dedicated complaint desk. While this should not be seen as a substitute for access to judicial proceedings, including appropriate remedies and redress, the act of establishing participatory procedures for grievances and related dispute resolution systems, such as the Agency's informal procedures mentioned above, can serve as an early warning and prevention mechanism.

48. Achieving the right to an adequate remedy for victims of exposure to hazardous substances and wastes in Sierra Leone is extremely challenging for a number of reasons, including financial barriers and a lack of confidence in the justice system. The Government recognizes that the justice sector suffers from significant deficiencies; in this regard, it is acknowledged in the Agenda for Prosperity that growth and development will not be achieved without enhanced access to justice and the rule of law.

49. In the context of hazardous substances and wastes, adverse impacts on human rights may include implications for the rights to life, health, food, water and adequate housing. Violations are often interrelated and entrenched in patterns of exclusion, marginalization and unequal power relationships. Beyond ensuring remedies for individual violations, the Government is encouraged to increase its efforts to identify those patterns and address their structural causes in policymaking and budgeting.

50. The Special Rapporteur was informed of the efforts by one company, Socfin, to participate in the establishment of a grievance committee, chaired by a paramount chief, to channel grievances and submit and discuss allegations and issues of concern. A community liaison team was also in place to facilitate communication and dialogue with local communities. While initiatives such as the grievance committee can help to provide a space for discussion, the Special Rapporteur observes that they cannot serve as replacements for justice mechanisms, considering the complex representation of forces within each community.

51. There is a widely recognized global crisis facing environmental human rights defenders (see also A/HRC/36/41, para. 78). In Sierra Leone, concerns have emerged regarding judicial harassment of community leaders opposing large-scale economic projects. In 2015,[23] a group of Special Rapporteurs addressed a communication to the Government of Sierra Leone on allegations received concerning the arbitrary arrest and trial of activists belonging to the Malen Land Owners and Users Association who accused Socfin of land-grabbing. Six activists of the Association were charged with destruction of growing plants, conspiracy and incitement. In 2016, all were found guilty and sentenced to pay a fine or face detention. The Government regrettably did not respond to the communication. The sentencing and arbitrary detention of community leaders questioning land-lease agreements is especially concerning, as it seems to be directly related to the legitimate attempts of residents to seek justice while challenging the arrangements between business enterprises and a local chief. This sort of harassment would be incompatible with the country's recognized human rights obligations and would also contradict the Government's stated commitments to ensuring that economic investments are promoted while paying full attention to the rights of the most vulnerable communities.

52. Concerns have also emerged with regard to the intimidation of non-governmental organizations (NGOs) reporting on allegations of human rights violations. In 2013, Socfin filed a defamation case in Sierra Leone[24] against Green Scenery (Sierra Leone) and Oakland Institute (United States of America),[25] organizations that were reporting on alleged

[23] See https://spcommreports.ohchr.org/TMResultsBase/DownLoadPublicCommunicationFile?gId=21201.

[24] See www.fian.be/IMG/pdf/writ_of_summon.pdf.

[25] Green Scenery and others, "End intimidation around Sierra Leone oil palm project", media release, 3 June 2013.

abuses, including inadequate compensation, corruption and pressure on landowners and chiefs to sign agreements to give up their land to Socfin. In addition, the Bolloré Group, a major shareholder in Socfin, filed a defamation suit in France against journalists with the Bastamag news agency for a 2012 report[26] accusing Bolloré of human rights abuses, including land-grabbing in Sierra Leone. The defamation claims were rejected by French courts in 2016. Filing defamation cases against NGOs and journalists carrying out their vital work of reporting on what they consider to be abuses in land-leasing deals between authorities and business enterprises is incongruent with the responsibility of business enterprises to respect human rights.

53. The Special Rapporteur underlines that while access to legal remedy may be the foremost concern, authorities should also ensure that appropriate medical treatment is available to those in need.

54. The Special Rapporteur recalls that, in case of adverse impacts on human rights resulting in irremediable harm (such as irreversible health effects or biodiversity loss), business enterprises should take proactive measures to prevent or mitigate such harm (see also A/72/162, para. 70). Where such harm has already occurred, the need for business enterprises to be held accountable for their activities must be highlighted. For example, while acknowledging that OCTÉA ended surface mining activities in 2016, the Special Rapporteur stresses the importance of addressing and remedying any adverse impacts that may be related to the company's operations until that date, as appropriate.

55. Problems with land tenure and concessions for large-scale investments in mining and agriculture are widely recognized by multiple stakeholders. Power imbalances between investors and affected communities can often escalate into violence, with serious negative repercussions for rural communities living in poverty. In this context, improving access to remedies for those claiming compensation should be prioritized. For example, questions concerning the fairness of agreements between business enterprises and local leaders have arisen in the past in relation to large-scale agriculture projects. Often, the local community accuses business enterprises of land-grabbing, leading to conflict between the parties.

56. Lack of access to justice and remedies seems to be at the root of the deterioration of conflict situations arising from large-scale economic projects in Sierra Leone. In the extractive projects studied during the Special Rapporteur's visit, tensions between local communities and business enterprises had sometimes deteriorated into protests, with allegations of police violence and intimidation against community members. In 2007 and 2012, workers and local residents reportedly protested against the working conditions in the diamond mines and against the environmental impact. Twice, police officers violently repressed the protests, reportedly killing two protesters in 2007 and two more in 2012, including a 12-year-old boy.

57. Sierra Leone has an obligation to protect people from recurring episodes of violence. The Government has a clear international human rights obligation to guarantee the security of residents voicing their discontent and is also obliged to thoroughly investigate such episodes, identifying those responsible for the violence. An investigation was reportedly launched by the Human Rights Commission of Sierra Leone on those violent events, but no report was made public. The Special Rapporteur commends the Commission for having assumed responsibility for its failure to publish the report in a timely manner but reminds the Commission of the necessity to avoid any further delay.

58. The Special Rapporteur notes that tensions accompanying large-scale economic projects indicate challenges with ensuring adequate channels for local groups to be fully informed of and consulted on extractive activities and point to an absence of access to justice mechanisms whenever conflict emerges. Strengthening participation processes and establishing grievance committees may contribute as alternative tools for redress or remedy to garner respect and interest from the local community. Continued episodes of violence in large-scale agriculture and mining projects may be avoided by addressing the apparent

[26] Nadia Djabali, « Bolloré, Crédit agricole, Louis Dreyfus : ces groupes français, champions de l'accaparement de terres », *Basta !*, 10 October 2012.

isolation of the affected communities living in poverty, giving systematic attention to their needs and enhancing the various paths to achieve access to justice.

IV. Sector-specific concerns

A. Extractive industries

59. Sierra Leone has vast reserves of diamonds, rutile, bauxite, gold, iron and limonite and counts on the export earnings of those minerals to support its economic growth. In 2012 alone, exports reportedly increased by 147.3 per cent owing to the resumption of iron ore production and exports by two iron ore mining business enterprises. In 2016, minerals accounted for more than 70 per cent of the country's exports.[27] In 2017, a weak recovery of iron ore production contributed to a 2 per cent slowdown in economic growth, and increased private sector investment in mining was identified as one of the factors contributing to a 5 per cent projected rise in economic growth in 2018.[28] Yet, it is recognized in the Agenda for Prosperity that without appropriate regulation and oversight, mining can result in numerous harmful consequences.

60. Mining in Sierra Leone has often been considered to be one of the factors contributing to political instability and is often cited as one of the reasons for the country's recent civil war. Disputes over the way in which mining activities were initiated and, in particular, the distribution of mineral revenues have historically resulted in tensions. Limited resources create additional obstacles to conducting precise assessments of the environmental impact of past, present and future mining initiatives.[29]

61. Large-scale mining is an important part of the mining sector in Sierra Leone; business enterprises are therefore key stakeholders, with the responsibility to respect human rights. Concerns over limited oversight and support for artisanal mining were raised, especially considering the relevance of this practice for those living in poverty. Estimates indicate that nearly 38 per cent of diamond exports were mined in artisanal mines. A recent study highlighted that a lack of support for ensuring that those activities are sustainable could lead to environmental damage, which, in the future, would practically nullify the potential economic benefits to the communities engaged in artisanal mining. Artisanal miners informed the Special Rapporteur that limited understanding of and capacity to act on environmental issues, limited accountability for any damage caused and limited capacity for the promotion of land rehabilitation were among their top concerns.[30]

62. Communities reported adverse health impacts potentially associated with exposure to hazardous substances and wastes from mining activities, including cases of fever as a result of breathing blast-generated dust as well as skin, vision and hearing problems, often compounded by inadequate medical attention; individuals suffering from such conditions are allegedly routinely treated for malaria. Cases of waterborne diseases have reportedly also increased. Air and water pollution contribute to poor health outcomes,[31] and this is especially a concern for the mining sector. The availability of safe water and sanitation also remains problematic. Heavy noise pollution, associated with both blasts and other sources of noise, such as heavy processing plants and machinery, remains a concern.

63. Community development agreements are required for the approval of mining projects and are important for consultations with and the participation of communities

[27] Economic Commission for Africa, *Country Profile 2017: Sierra Leone* (Addis Ababa, 2018).

[28] World Bank, *Macro Poverty Outlook for Sub-Saharan Africa: Country-by-Country Analysis and Projections for the Developing World, Annual Meetings 2018*.

[29] Fenda A. Akiwumi and David R. Butler, "Mining and environmental change in Sierra Leone, West Africa: a remote sensing and hydrogeomorphological study", *Environmental Monitoring and Assessment*, vol. 142, Nos. 1–3 (July 2008).

[30] Rachel Lichte, "Artisanal diamond mining in Sierra Leone: social impacts, environmental awareness and opportunities for change", Master's project, Duke University, 2014.

[31] WHO, *Country Cooperation Strategy 2017–2021*.

neighbouring mining projects. Furthermore, such agreements advance the right to free, prior and informed consent.[32] Despite established requirements for environmental impact assessments and for the promotion of community development agreements through consultations with affected groups, the licensing process in Sierra Leone could be improved. There appear to be inadequate guarantees of meaningfulness and fairness in the process for establishing community development agreements. The responsibility for concluding such agreements rests primarily with those who hold or aim to hold small- or large-scale mining licences. In such scenarios, consultations with affected communities may be inadequate, as the agreements appear to be based on arrangements made between the business enterprise and local chiefs. This is especially problematic considering the political and economic power imbalances between business enterprises interested in developing mining projects and the communities that live with the consequences of the projects. Clearer requirements for the agreements should be established to ensure that consultations with the affected communities are meaningful. This concern is amplified by existing limitations on access to justice for those living in areas affected by extractive projects. Another challenge is that the process of concluding such agreements does not appear to involve external expert bodies with technical expertise on the social, cultural and economic implications of projects.

64. Multiple reported human rights violations, relating predominantly to inadequate consultations with and participation of communities, have been attributed to big mining projects in Sierra Leone. If the affected communities are fully informed and meaningfully consulted before the start of large projects, challenges may be addressed. However, without access to justice, residents affected by large projects or victimized by the police have no chance of accessing remedies.

B. Oil palm farming and other agricultural activities

65. Agriculture is considered the backbone of the Sierra Leone economy. In 2015, agriculture, including forestry, fishing and hunting, accounted for 61.3 per cent of the country's gross domestic product, according to *African Economic Outlook 2017*. The National Sustainable Agriculture Development Plan 2010–2030 provides the main public policy vision.[33] It focuses mostly on the creation of an enabling environment for investment in agriculture and the need to improve policy coordination and revise the regulatory framework. Oil palm is one of the tree crops with major economic importance in Sierra Leone.[34]

66. The agriculture sector faces challenges relating to oversight of the use of agrochemicals, the impact of chemicals on agricultural workers and nearby communities and the potential contamination of food and water sources.

67. A study on the use of pesticides on rice crops in Sierra Leone yielded troubling results illustrating the risks of unregulated use of chemicals in agriculture.[35] Interviews with some 500 rice farmers indicated that a wide range of pesticides were in use, including some internationally banned pesticides, such as parathion. The most commonly used pesticides included chlorpyrifos (60 per cent), carbofuran (20 per cent), malathion (5 per cent) and carbolineum (5 per cent). It was indicated in the study that 46 per cent of the pesticides in use entered the country by irregular means. It was further noted that since the majority of rice farmers surveyed were poor, they could not afford to buy pesticides from legal vendors.

[32] See section 139 of the Mines and Minerals Act, 2009; community development agreements should be funded from no less than 1 per cent of a company's gross revenue obtained the year before the agreement is signed. However, the figure remained unconfirmed during the mission, as no interlocutor with the Special Rapporteur, including representatives of the Ministry of Mines and Mineral Resources and the National Minerals Agency, was in a position to clarify it.

[33] See also Margaret Akinyi Wagah, "Nutrition impact of agriculture and food systems: Sierra Leone", country policy analysis (Geneva, United Nations Standing Committee on Nutrition, 2013).

[34] FAO, "Continental programme on post-harvest losses reduction: rapid country needs assessment: Sierra Leone", working paper (Rome, 2011).

[35] Sankoh and others, "An assessment of the impacts of pesticide use on the environment and health of rice farmers in Sierra Leone", *Environment International*, vol. 94 (September 2016).

Seventy-one per cent of the respondents had not received any training on the safe use of pesticides. It was also confirmed that storage of the chemicals was inadequate and that 90 per cent of workers used no personal protection when applying pesticides. Pollution of adjacent waterbodies and accumulation of pesticides in soil and sediment were probable results of the continuous uncontrolled use of pesticides. Finally, it was concluded that cases of skin problems, nausea, seizures, respiratory disorders, blurred vision, loss of appetite, lachrymation and nervous disorders were significantly higher among farmers who used pesticides than among those who did not. Yet it was underscored that it was not possible to determine whether farmers were experiencing chronic effects of pesticide poisoning because of the lack of monitoring of health effects.

68. Close monitoring of the use of pesticides in agriculture is essential in order to minimize the exposure of workers, their families and nearby communities, as well as to mitigate associated health risks.[36] Continued use by agricultural workers of higher amounts of pesticides and other pollutants and the proximity of their homes to their worksite mean that they may be exposed to environmental and health hazards (see A/HRC/20/15). In rural communities, the Special Rapporteur heard complaints of contamination potentially related to the activities of business enterprises engaged in large-scale oil palm farming. He was also informed of the inadequacy of protective clothing and training to prevent exposure to pesticides. The Special Rapporteur was informed of the existence of training for workers to raise awareness of different chemicals, including pesticides used on plantations, as well as of the use of sprays by handlers and applicators.

69. The Special Rapporteur points out that, in some situations, the Government seems to have adopted contradictory policies to stimulate the purchase of toxic products in order to boost economic activity, despite limited resources and capacity for their management. For example, section 49 of the Finance Act, 2013, provided for a five-year window for the duty-free import of "agriculture inputs", including pesticides and fertilizers. The activities listed in the National Food and Nutrition Security Implementation Plan 2013–2017 to improve the production of vegetables include facilitating the acquisition by communities of production packages, including fertilizers, agrochemicals and pesticides. Those incentives leave considerable room for concern considering the critical gaps that exist in ensuring the safe use of such dangerous chemicals.

70. The formulation of proper disposal methods for obsolete pesticides and public awareness of ways in which to handle them are needed in Sierra Leone. The Special Rapporteur was informed that empty pesticide containers were often used for the storage of water and food, among other purposes. State commitment to the right to information and safeguarding the availability, accessibility and consistency of such information would increase awareness of the potential risks and the preventive measures to be adopted by those using agrochemicals.

C. Chemicals and waste management

71. Rapid urbanization and challenges with resource management in Sierra Leone appear to contribute to the prevalence of waste management concerns.[37] Solid waste in particular poses a challenge in urban areas.[38] For example, it is reported that Freetown alone generates an estimated 600 tons of solid waste daily, including household, medical, hazardous and toxic waste.[39] The Special Rapporteur underscores the potential impact of this waste, especially hazardous and toxic waste, on health and the environment.

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[36] Ibid.

[37] World Bank, *Sierra Leone: Rapid Damage and Loss Assessment of August 14th, 2017 Landslides and Floods in the Western Area* (Washington, D.C., 2017).

[38] Foday Pinka Sankoh and Xiangbin Yan, "Problems of solid waste management in developing urban cities: a case study of Freetown, Sierra Leone", *American Journal of Environmental Protection*, vol. 2, No. 5 (October 2013).

[39] UNICEF, "Annual report 2014: Sierra Leone".

72. The increasing emphasis on country-driven programmatic approaches to economic and social development provides a strong rationale for the integration of priorities regarding the sound management of chemicals into national development planning processes. The ultimate goal of sound chemical management is to minimize the negative effects of chemicals on health and the environment and to fully benefit from the positive impacts of their use where necessary.[40] It is of particular concern to the Special Rapporteur that the Sierra Leone development agenda does not include chemicals and waste as a priority area.

73. Waste minimization is a more advisable way for national and subnational governments to limit the introduction of waste into the environment and reduce the cost of waste disposal, recovery and treatment.[41] Thus far, the focus of Sierra Leone has been on waste collection. During discussions with the Special Rapporteur, public officials acknowledged that waste management was one of the greatest environmental, health and social challenges faced by Sierra Leone. There remains a need to further consider a shift of focus to waste minimization in order to mitigate the risks of exposure to toxic wastes.

74. The Freetown City Council has in place a collection system that handles approximately 473.15 tons of waste per day, but almost 127 tons remain uncollected.[42] Less than 50 per cent of the total waste output of Freetown reaches the two major dump sites in the capital area, at Granville Brook and at Kingtom.[43] The country's waste management framework still presents serious challenges. If left unaddressed, these challenges will threaten human rights through exposure to wastes, which will have a negative impact on the health and livelihoods of the people.

75. Pressure on the waste management system in Freetown has resulted in significant dumping of wastes, and the resulting pollution in the city poses a risk to health and the environment. Insufficient capacity for and inadequate organization of waste management in Sierra Leone often lead to the processing of waste in neighbouring countries. For instance, broken glass is transported to Cameroon, and used oil is sent to Ghana. The Special Rapporteur notes that the Government has conducted advocacy activities to sensitize stakeholders on the impacts of improper waste management. Regarding the use of plastics, the Environment Protection Agency has engaged businesses and encourages the formation of public-private partnerships to improve investment in and the infrastructure for recycling.

76. Insufficient capacity for waste management affects economic activities and not only limits economic growth, but also contributes to toxic chemical exposure. In a 2014 environmental assessment of the Granville Brook and Kingtom dump sites, the Ministry of Lands, Country Planning and the Environment and the Freetown City Council acknowledged the need to strengthen the legal and institutional framework for solid waste management in Sierra Leone and provided examples of the health and environmental risks for people living both in and near the dump sites.[44] These risks ranged from exposure to waterborne and other infectious diseases to contamination of air, soil, streams and the sea, with potential consequences also for the food chain. The Ministry and the Council recommended the closure of the Granville Brook and Kingtom dump sites and relocation of the final waste disposal locations to new landfills to be built and operated according to international standards.

77. Communities living near dump sites face the risk of exposure to high levels of toxics through various routes, especially inhalation, dermal exposure and consumption of food produced at or near the sites. At the dump sites in Freetown, open burning is reportedly used without any sorting mechanism, and people living near the dump sites, including children and pregnant women, inhale smoke and dangerous fumes on a daily basis. Swine farming at or near the dump sites poses a further challenge, as toxins enter the food chain when consumed by pigs, which are then consumed by people, resulting in such toxins

[40] UNEP, *LIRA-Guidance*.

[41] See www.who.int/water_sanitation_health/facilities/waste/module11.pdf.

[42] UNICEF, "Annual report 2014: Sierra Leone".

[43] World Bank, *Sierra Leone: Rapid Damage*.

[44] Freetown City Council, *Environmental Assessment and Evaluation of Natural Disaster Risk and Mitigation in Freetown* (January 2014).

posing a heightened risk to health through bioaccumulation and biomagnification.[45] Of particular concern is the potential cumulative effect of delays in responding to evidence of the negative impacts of improper waste management on human health and the environment.

78. The Special Rapporteur welcomes the Government's support for and openness to evaluations, including the recommendation to close open dump sites, while acknowledging that there is room for improvement in this sphere. He reminds Sierra Leone of its obligation to have both national and subnational governments draft, adopt and implement environmentally sound solid waste management and disposal programmes.

V. Conclusions and recommendations

79. **Sierra Leone has overcome several challenges in recent years and is poised for a considerable expansion of economic sectors. This raises concerns about increasing exposure to toxic substances through contaminated water and food, as well as air pollution. In fact, these issues already exist. During his visit, the Special Rapporteur met with various stakeholders and gathered information on issues pertaining to his mandate. He paid particular attention to ways in which national systems minimize exposure to toxic substances by preventing pollution and managing industrial chemicals, pesticides and waste, and studied specifically the impacts of extractive industries and agricultural activities on human rights.**

80. **The Special Rapporteur is fully aware that the social and economic situation of Sierra Leone and the specific issues faced, including the lack of resources and social vulnerability of large parts of the population, pose additional challenges to achieving higher standards of and consolidating good practices in ensuring human rights associated with the management of hazardous substances and wastes. It is with this understanding of the difficulties faced by the country, its authorities and its population that the Special Rapporteur proposes a number of recommendations, which he hopes could promote improvements in areas related to his mandate. The Special Rapporteur stands ready to assist the country in ensuring any follow-up to and practical implementation of his recommendations.**

81. **In the case of the extractive industry, the Special Rapporteur notes the need for improvements in relation to the degradation of ecosystems, debris accumulation, soil and water contamination, explosions, dust emissions and limited remediation measures.[46] With regard to agriculture, issues include the use of agrochemicals and the need for increased transparency, consultation with local communities and adequate compensation during land acquisition processes.[47] Concerning rapid urbanization, the Special Rapporteur notes serious challenges regarding waste management in Freetown. Addressing the disproportionate impact of mining, agriculture and improper waste management on already marginalized groups, such as women and children, would produce desirable effects on those most at risk and the broader community.**

82. **The Special Rapporteur therefore recommends that the Government:**

(a) **Urgently mobilize financial and technical resources to minimize exposure to hazardous substances through the adoption of cost-recovery systems. In parallel, he urges the Government to strengthen anti-corruption efforts in the entire**

[45] Abubakarr S. Mansaray and others, "Exposure to dioxins and furans at the Bormeh Kingtom dumpsite in the western area of Sierra Leone", *Natural Resources*, vol. 6, No. 9 (September 2015).

[46] Human Rights Watch, "Whose development? Human rights abuses in Sierra Leone's mining boom", 19 February 2014.

[47] Integrated Regional Information Network, "Land deals beginning to stir discontent", 20 March 2012; Mark Tran, "Sierra Leone's smallholder farmers 'worse off' after large land deals", *The Guardian*, 26 July 2013; Genesis Tambang Yengoh and Frederick Ato Armah, "Effects of large-scale acquisition on food insecurity in Sierra Leone", *Sustainability*, vol. 7, No. 7 (2015); Genesis Tambang Yengoh and others, "Factors of vulnerability: how large-scale land acquisitions take advantage of local and national weaknesses in Sierra Leone", *Land Use Policy*, vol. 50 (January 2016).

governance structure for hazardous substances and wastes. He urges the international community, including States and international organizations, to support those efforts through financial and technical assistance;

(b) Consider increases in the budgetary resources directed at minimizing the adverse effects of toxic substances on the enjoyment of human rights by enhancing the private sector's financial and technical participation in meeting the costs of the full implementation and enforcement of national laws concerning chemicals;

(c) Reconsider, in the light of the national elections held in March and April 2018, a meaningful constitutional review with a participatory process in conformity with international human rights obligations. The review should lead to the adoption of international human rights commitments, especially regarding economic, social and cultural rights, at the national level;

(d) Continue to finalize and adopt various pieces of draft legislation currently pending in order to put into effect at the national level the international protections of human rights in the context of exposure to hazardous substances and wastes;

(e) Ensure the timely implementation of laws and policies already in place in the context of exposure to hazardous substances and wastes;

(f) Revise the requirements for obtaining an environmental impact assessment licence according to the different sectors of the economy for which such a licence is sought in order to strengthen information requirements placed on applicants and to take into consideration the social aspects of projects, including the health impacts of exposure to toxic chemicals as a result of the applicant's activities;

(g) Revise legislation on occupational health and safety to ensure conformity with the Constitution of Sierra Leone and commitments under international law;

(h) Revise existing and inadvisable waste management systems and explore new viable solutions to deal with the waste problem in Sierra Leone, in particular, the dump sites in Freetown;

(i) Take further steps towards improving existing government structures, reinforcing inter-agency coordination and cooperation and addressing the overlapping roles and responsibilities of government agencies regarding issues related to hazardous substances and wastes. The allocation of clear legal mandates among public bodies and the provision of adequate powers and resources to the responsible authorities appear to be critical to increasing their ability to fulfil their mandates;

(j) Ensure adequate resourcing for and full independence of the Human Rights Commission of Sierra Leone, in line with recommendations made by the Human Rights Committee in 2014, as well as those made in the context of the universal periodic review in 2016;

(k) Consider the prompt ratification of the Bamako Convention;

(l) Strengthen occupational protections in line with principles proposed by the Special Rapporteur in his report on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes (A/HRC/39/48) and consider the prompt ratification of the ILO conventions No. 155, No. 170, No. 174, No. 176, No. 184 and No. 187;

(m) Develop mechanisms to realize the right to information on, meaningful participation in and access to remedies regarding matters pertaining to hazardous substances and wastes, including by:

(i) Adhering, at a minimum, to the standards of the Aarhus Convention;

(ii) Improving the quantity and quality of medical information gathered on affected populations by prioritizing diligent data collection and analysis of health indicators at the national level;

(iii) **Developing policies and guidelines aimed at ensuring that communities living in areas surrounding large-scale mining projects are consulted during the preparation of social and environmental risk assessments and receive the completed evaluations;**

(n) **Ensure that claims of violations and abuses of human rights related to exposure to toxic chemicals and wastes are justiciable;**

(o) **Require business entities operating in Sierra Leone to conduct human rights due diligence in general and with a specific requirement to evaluate the risks and impacts of exposure to toxic substances.**

83. **The Special Rapporteur recommends that business enterprises:**

(a) **Put into effect the Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework with respect to their activities that produce, use, release and otherwise may result in human exposure to toxic substances;**

(b) **Internalize the costs of chemicals and waste management;**

(c) **Increase transparency with regard to their activities and interactions with the Government by communicating information externally, particularly when concerns are raised by or on behalf of affected stakeholders over exposure to hazardous substances and wastes;**

(d) **Avoid the use of chemical products and practices that are forbidden in the economies and countries in which they are domiciled, especially in cases where those home States provide stronger protection from exposure to hazardous substances and wastes;**

(e) **Increase protection from exposure to pesticides and other toxic chemicals for children and women of childbearing age. This emanates from the Special Rapporteur's concern that some children accompany their parents to farms, plantations, mines and other workplaces with risks of exposure to toxics.**

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Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes on his mission to Denmark and Greenland*

Note by the Secretariat

The Secretariat has the honour to transmit to the Human Rights Council the report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes on his mission to Denmark and Greenland. In the report, submitted pursuant to Council resolution 36/15, the Special Rapporteur shares his findings and recommendations derived from his official country visit, carried out from 2 to 13 October 2017

* The present report was submitted after the deadline in order to reflect recent developments.

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Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes on his mission to Denmark and Greenland**

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** Circulated in the language of submission only.

I. Introduction

1. In the present report, submitted pursuant to Human Rights Council resolution 36/15, the Special Rapporteur on the implications for human rights of the environmentally sound disposal of hazardous substances and wastes shares his findings and recommendations from his mission to Denmark and to the self-governing territory of Greenland from 2 to 13 October 2017.

2. The Special Rapporteur expresses his deepest gratitude to the Government of Denmark for the invitation to visit the country and its exemplary cooperation. In particular, the Special Rapporteur thanks the Ministry of Environment and Food for organizing meetings with authorities in Copenhagen, and the Greenland self-government authorities for organizing meetings with government entities and authorities in Ilulissat and Nuuk.

3. In Denmark, the Special Rapporteur met representatives of the Ministries of Foreign Affairs, Defence, Environment and Food, and Health, the Environmental Protection Agency and the Danish Institute for Human Rights. From the business community, he met representatives of the Confederation of Danish Industry, Danish Shipping and A.P. Moller-Maersk. He also met representatives of the European Environment Agency and multiple civil society representatives working on human rights, labour rights, equitable trade and environmental issues.

4. In Greenland, the Special Rapporteur met representatives of the Ministries of Independence; Foreign Affairs; Fisheries, Hunting and Agriculture; Mineral Resources and Labour; Industry and Energy; Nature and Environment; and Health, as well as representatives of the Environmental Agency for Mineral Resource Activities. He also visited the Parliament of Greenland and met parliamentarians on the committees on the environment and foreign affairs. The Special Rapporteur also met members of the Human Rights Council, representatives of the Inuit Circumpolar Council and civil society representatives.[1]

5. The Special Rapporteur thanks all of the civil society organizations, companies and individuals in Denmark and Greenland whom he met for their time and cooperation in sharing information on their views and experiences.

6. The present report contains separate observations on the situation in Denmark and Greenland, given the specificities of the legal and institutional frameworks in place in the self-governing territories of Denmark. Because the Special Rapporteur was unable to visit the Faroe Islands, the situation there is not addressed in the report. The last section of the report provides conclusions and recommendations with respect to the observations made on Denmark and Greenland.

II. The situation in Denmark

A. National legal and institutional framework

7. The Constitution of Denmark guarantees a number of civil and political and human rights. Nevertheless, the level of incorporation of international human rights instruments, in particular instruments associated with economic, social and cultural rights, into national legislation, is considered insufficient (see CRC/C/DNK/CO/5, paras. 5 and 6, and E/C.12/DNK/CO/5, para. 4). The European Convention on Human Rights is the only human rights treaty that has been incorporated into Danish law to date. In 2014, an expert committee established by the Government presented an assessment of the implications of incorporating additional human rights instruments into legislation, with most of its members favouring such incorporation. Civil society organizations have expressed their disappointment that the only result of the committee's work was that the Government decided to accede to the third Optional Protocol to the Convention on the Rights of the

Child.[1] The Government indicates that, although the treaties are not incorporated into law, they are applied nationally by the courts and other relevant authorities (see A/HRC/32/10/Add.1).

8. Denmark has ratified most global human rights treaties. Two notable exceptions, however, are the Optional Protocol to the International Covenant on Economic, Social and Cultural Rights and the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families. The Special Rapporteur underlines the importance of ratifying both instruments, noting the special relevance of the Optional Protocol to the International Covenant to enhancing the protection of various rights often affected by hazardous substances and wastes, as well as the particular vulnerability of migrant workers to exposure to hazardous substances. Denmark regularly collaborates with international human rights mechanisms and has issued a standing invitation to the special mechanisms appointed by the Human Rights Council to visit the country. The Danish Institute for Human Rights, the national human rights institution, has A status under the principles relating to the status of national institutions for the promotion and protection of human rights (Paris Principles).

9. Denmark is a party to all of the global treaties relating to toxic chemicals and wastes and has actively championed the improvement of global standards at the regional and global levels. The regulatory system for protection from exposure to hazardous substances and the management of wastes is framed by European Union legislation and supported by additional national norms and mechanisms. Denmark works with Nordic, European (European Union, European Environment Agency and Registration, Evaluation and Authorization of Chemicals system) and global bodies to improve protection from exposure to toxic chemicals. As detailed below, the national experience with research on and the regulation of chemicals and other hazardous substances has contributed to the advancement of regulations and practices at the European and global levels.

10. The Ministry of Environment and Food is the main authority in charge of regulatory and research activities in the areas of environmental protection, farming and food production. Within the Ministry, the Environmental Protection Agency is the leading entity promoting protection from air, noise and waste-related pollution and from exposure to hazardous chemicals. The Danish Veterinary and Food Administration, within the same Ministry, carries out inspections on the presence of hazardous substances, including pesticides,[2] in food products, making recommendations to producers, importers and exporters. All inspections of farms regarding pesticide-related issues are managed by a single authority, the Danish AgriFish Agency. Occupational health and safety are promoted by the Danish Working Environment Authority, which is responsible for compliance with the standards thereof, under the auspices of the Danish Ministry of Employment. Continued ad hoc interministerial coordination at the national level, led by the Ministry of Environment and Food, is highlighted as a good practice to address the challenges of contamination of food and the environment resulting from pesticides and other toxics.[3]

11. National legislative instruments, norms and policies are framed by European Union regulations aimed at providing protection from exposure to hazardous substances and wastes. Often, as detailed below, Danish norms in such areas as the control of pesticides and other toxic substances go beyond European Union norms, providing incentives for regional improvements.

12. The Special Rapporteur is impressed by the societal value placed on the protection of people and the environment from toxic exposures. Denmark has championed freedom from toxic exposures for several years, with clear recognition in its national action plan that the improvement of international standards for toxic chemical production and use is

[1] Joint stakeholder submission, universal periodic review of Denmark, twenty-fourth session of the Human Rights Council, January–February 2016, Copenhagen, 22 June 2015.

[2] The present report uses the following World Health Organization definition of pesticides: chemical compounds that are used to kill pests, including insects, rodents, fungi and unwanted plants (weeds).

[3] Denmark, Ministry of Environment, "National Implementation Plan: Stockholm Convention on Persistent Organic Pollutants".

essential, given the country's reliance on imported goods. The country's promotion of a non-toxic environment, which the Special Rapporteur views as an essential component of the right to a healthy environment, has influenced the European Union-wide strategy for a non-toxic environment.[4]

B. Protection of children's right to the highest attainable standard of health

13. Denmark has achieved considerable progress nationally and internationally in the adoption of specific measures to protect children, and women of reproductive age, from toxic exposures. In general, children have higher levels of exposure than adults and are also more sensitive to the adverse effects of exposure to hazardous substances. States have a clear duty to take protective measures to minimize the exposure of children and, thus, women of reproductive age to pollution and toxic chemicals (see A/HRC/33/41). For decades, Denmark has applied the principles of prevention and precaution to protect children from toxic threats, often leading to improved standards of protection both in Denmark and abroad.

14. One of the most notable contributions of Denmark to protecting children from toxic exposures comes from its work on endocrine-disrupting, or hormone-disrupting, chemicals. Scientific evidence of the pervasive health impact of endocrine-disrupting chemicals and the urgent need to increase controls and restrictions to protect human health and, in particular child development, has emerged in the past two decades.[5] Exposure to such chemicals poses a distinct threat to the rights of children to life, health, maximum development and physical integrity, among others. Endocrine-disrupting chemicals have been linked to conditions such as declining sperm count, early puberty in girls and breast cancer. In 2002, Denmark adopted its first strategy in the field of endocrine-disrupting chemicals and combination effects. Current action plans are organized around three main areas: knowledge-building and the development of test methods, action-oriented investigations and regulation.

15. Significant investments have been made in research. In the 1990s, researchers in Denmark identified effects on male reproductive health possibly related to exposure to endocrine-disrupting chemicals during fetal development. In 2008, the Government established the Centre on Endocrine Disruptors to generate and disseminate scientific knowledge on the chemicals.

16. The Centre on Endocrine Disruptors has facilitated research in areas including the exposure of pregnant women, the combination effects on male and female hormone systems, options for grouping endocrine-disrupting chemicals for expedited regulatory action and the effects of those chemicals on the aquatic environment. Regarding the combination, or "cocktail", effect on young children of daily exposure to a mixture of toxic chemicals, Denmark has conducted research[6] identifying the deficiencies in individual risk assessment models for certain hazardous substances under real-world conditions. The research is important for improving measures for the protection of particularly vulnerable groups, such as women of childbearing age and children.

17. Measures adopted at the national level have often preceded similar measures taken by the European Union and have sometimes been hindered by the slower adoption of protective measures at the European Union level. In 1999, Denmark adopted a ban on all

[4] Vanessa Zainzinger, "Sweden and Denmark's influence on EU policy", Global Business Briefing, September 2014.

[5] A.C. Gore and others, "EDC-2: The Endocrine Society's second scientific statement on endocrine-disrupting chemicals", *Endocrine Reviews*, vol. 36, No. 6 (December 2015).

[6] Denmark, Environmental Protection Agency, *Survey and Health Assessment of the Exposure of 2 Year-olds to Chemical Substances in Consumer Products*, Survey of Chemical Substances in Consumer Products, No. 102 (Copenhagen, 2009) and *Exposure of Pregnant Consumers to Suspected Endocrine Disruptors*, Survey of Chemical Substances in Consumer Products, No. 117 (Copenhagen, 2012).

phthalates in toys and personal care products for children under 3 years of age. In 2007, the European Union adopted a ban on the use of only six phthalates in that context. In 2012, Denmark announced its intention to work towards a broader national ban on the use of phthalates, which, unfortunately, was blocked by the European Commission, using the European parameter as a means of lowering the level of protection.[7] In 2011, Denmark became the first country in the world to ban propylparaben and butylparaben in all personal care products for children up to 3 years of age.

18. The Government has also used taxes on hazardous substances to push for the further reduction of exposure, including taxes on pesticides, chlorinated solvents, chlorofluorocarbons, nickel-cadmium batteries, soft polyvinyl chloride and certain phthalates.

19. Since 2012, Denmark has pressured the European Union to adopt a set of criteria for endocrine-disrupting chemicals that would be applicable to all relevant legislative areas, including those relating to cosmetics, pesticides and industrial chemicals. In 2013, the Directorate-General for Environment of the European Union proposed criteria for the regulation of such chemicals, which Denmark supported but other members viewed as too stringent. The pesticide industry was particularly concerned, claiming that the criteria could prohibit the use of 40 per cent of its products, which indicated the extent to which control of endocrine-disrupting chemicals had lagged behind the state of the science on the issue. In 2016, the European Commission published its proposed criteria for the identification of endocrine-disrupting chemicals, which was criticized by many in the scientific community, including endocrinologists. Denmark joined the reaction against the criteria proposed, while noting that the proposal required unprecedented and scientifically unjustified levels of evidence, was inconsistent with corresponding legislation and lacked a precautionary aspect.[8]

20. The European Commission adopted criteria for identifying endocrine-disrupting biocides in 2017, with relevance to other pesticides and industrial chemicals. The criteria were criticized by medical specialists[9] for their limited scope and for requiring an excessively high burden of proof of how endocrine disruption has adverse effects. Concerns continue to be raised about a lack of transparency and the limited scope of participation for independent public researchers in the process. The Danish authorities are reportedly continuing to ask European regulators how to proceed, given the level of uncertainty.

C. Protection of workers

21. The approach of Denmark to protecting workers from exposure to hazardous substances includes the adoption of legislation, monitoring, continued investment in research and the creation of mechanisms for knowledge-sharing and collaboration among scientists, policymakers, business enterprises and civil society.

22. The legal and policy framework for protecting workers from exposure to hazardous substances includes the Working Environment Act, the Offshore Safety Act, the Act of Certain Offshore Installations and the Working Environment Authority Guidelines, which indicate how the law on occupational safety and health should be interpreted. In 1995, Denmark ratified the Occupational Safety and Health Convention, 1981 (No. 155) of the International Labour Organization. The law on the protection of workers from exposure takes a preventive approach, with concern focused on eliminating or minimizing exposure as a first step.

[7] Henriette Jacobsen, "Denmark defies EU with planned ban on phthalate chemicals", EURACTIV, 27 August 2012.

[8] Esben Lunde Larsen, "Denmark's environment minister: why the Commission's EDCs criteria fall short", Global Business Briefing, September 2016.

[9] Endocrine Society, "EU criteria fall short of protecting public from endocrine disrupting chemicals", 7 June 2018.

23. The Danish Working Environment Authority is responsible for conducting occupational health and safety inspections of all companies, communicating information relating to occupational safety and health and drafting regulations. The rights of workers in relation to remedies for workplace accidents and occupational diseases are covered under the Consolidated Workers' Compensation Act No. 278 of 14 March 2013. Employers and occupational medical service providers have a duty to report cases of industrial injury to the Labour Market Insurance Board, which assesses, investigates and makes decisions on claims. The establishment of a list of occupational diseases is considered to have facilitated workers' access to remedies.

24. In a 2017 review of the literature on occupational safety and health,[10] it was concluded that the introduction of legislation, combined with activities relating to the enforcement of labour inspection, contributed to a reduction in injuries and fatalities and improved compliance with regulations.

25. The legislative requirement to substitute less hazardous substances or materials for more hazardous ones, even if the effects of the hazardous substances are insignificant, seems to have contributed in particular to progress made in protecting workers and, consequently, consumers, from exposure. The publication of a list of undesirable substances, the substitution of which is encouraged, has further improved the protection of workers.

26. The experience of protecting the right of workers to safe and healthy working conditions reflects the country's overall strategy regarding the promotion of a non-toxic environment and continuously identifying and eliminating hazardous chemicals and is a relevant source of knowledge of the multiple instruments that may be utilized by Governments.

27. The Ministry of Environment and Food publishes annually detailed and disaggregated statistical data on pesticide use.[11] Research conducted in Denmark has served to raise awareness of the need to increase levels of protection. A 2015 study on the implications of the exposure of pregnant women working in greenhouses to pesticides, for example, identified adverse effects on the neurodevelopment of their children, even though the exposure occurred only during early pregnancy and under well-regulated working conditions.[12]

28. The Special Rapporteur acknowledges the efforts of Denmark to promote occupational safety and health through cooperation with other Governments, to which he attaches great importance, given the transnational production and disposal chains of Danish businesses. Among other activities, through a 2016 project in Bangladesh, an expert group on occupational safety and health was established in the Department of Inspection for Factories and Establishments of the Government of Bangladesh. The Special Rapporteur welcomes such cooperation, but was disappointed to note that the efforts to cooperate did not include support for the shipbreaking industry in Bangladesh or elsewhere, notwithstanding the substantial impact of Danish businesses in this sector on the rights of foreign workers. He encourages further efforts by Danish businesses enterprises to ensure that all workers are protected from exposure to toxic substances in their supply chains, among other concerns regarding workers' rights.

[10] J.H. Andersen and others, "Systematic literature review on the effects of occupational safety and health (OSH) interventions at the workplace", report to the Danish Working Environment Authority, Copenhagen, August 2017.

[11] See http://eng.mst.dk/chemicals/pesticides/pesticides-statistics.

[12] Helle R. Andersen and others, "Occupational pesticide exposure in early pregnancy associated with sex-specific neurobehavioral deficits in the children at school age", *Neurotoxicology and Teratology*, vol. 47 (January–February 2015).

D. Information and public participation

29. Information is the cornerstone of efforts to respect and protect human rights from toxic exposures.

30. A relevant initiative for knowledge-sharing and informing the development of norms and policies is the establishment of the Chemicals Forum of Denmark. The Forum promotes dialogue among authorities, industry, consumer organizations and other relevant stakeholders sharing information in the products area. Collaboration with the Central Customs and Tax Administration and the Danish Safety Technology Authority helps to promote the enforcement of regulatory decisions made at the Forum. In the same space, experts may raise alerts about potentially harmful substances to be studied or eliminated and discuss practical challenges to ensuring the elimination of those chemicals.

31. The mobile phone application Tjek Kemien, developed in 2014, helps consumers to gain some control of their exposure to toxic chemicals and use their collective purchasing power to drive the adoption of safer chemicals in a variety of consumer products, such as toys, electronics, clothes and furniture, that could contain toxic substances. The application sends a request for information on the presence of various substances of very high concern, such as those linked to cancer, mutations and reproductive harm. The manufacturer is required to provide the information within 45 days, free of charge, and offer guidance on the safe use of the product in accordance with European Union Registration, Evaluation and Authorization of Chemicals regulation. Danish consumers have reportedly used the application nearly 120,000 times since its creation,[13] and more than 1,000 companies have provided information. In more than 7,000 cases, the consumer has received an answer right away.[14] The application supported the improvements made by industry aimed at avoiding the use of substances of very high concern for the purpose of either increasing consumer confidence or avoiding the costs of non-compliance. The use of the application has gradually decreased, possibly because of delays in receiving information and the challenges associated with obtaining responses from companies abroad. A similar application has been developed in Germany, and the European Union is supporting a Europe-wide version.[15]

32. The Danish Consumer Council invests in the promotion of testing for the presence of undesirable substances in multiple consumer products and in the dissemination of information thereon among consumers and retailers. Through the Council's project "Think Chemicals", the content of a very wide range of products, such as body lotions, toys, deodorants and food containers, is examined. The results of the tests conducted by the Council over the years are made available online.[16] Testing processes help to raise the awareness of the overall population, the result of which is that manufacturers and retailers are sometimes persuaded to adopt measures to ensure that the products offered are safer. The Special Rapporteur was informed that local companies tended to be very collaborative in finding safer alternatives, while some global giants, which were proportionally affected less by the Danish market, were less keen to do so. The coordination of data collection in Denmark with similar processes in other locations in Europe is also helping organizations to push for greater protections at the European Union level.[17]

[13] Tammy Lovell, "Danish Consumer Council says SVHC app is a success", Chemical Watch, 27 March 2018.

[14] Tiiu Bräutigam, "Danish app for consumers a big success", European Chemicals Agency Newsletter, No. 1 (February 2015).

[15] Tammy Lovell, "EU-wide app to learn from Danish project problems", Chemical Watch, 13 March 2018.

[16] See http://kemi.taenk.dk/english.

[17] Niels Søndergaard, "Fast food packaging contains unwanted fluorinated substances", Danish Consumer Council, 9 March 2017.

E. Extraterritorial impacts of shipbreaking

33. It is perhaps outside of the continent where Danish business activities have given rise to the most serious impacts on human rights. Victims of transnational rights abuses perpetrated by businesses, in particular with respect to occupational exposure to toxic substances, face various obstacles in seeking effective remedy. The challenges include proving damages, establishing causality, high costs and, potentially, a lack of independence of judicial systems. States have a duty to address these and other extraterritorial impacts of businesses domiciled in the State's territory or subject to its jurisdiction in order to prevent the denial of justice and ensure the right to effective remedy of victims abroad (see E/C.12/GC/24).

34. Denmark, with one of the world's largest shipping sectors, has at times contributed to the development of sound practices in the dismantling of ships. In 2017, it ranked seventh in a global ranking of operator nations.[18] The Danish company A.P. Moller-Maersk is a world leader in the sector; as of October 2018, it had a global market share of 17.7 per cent.[19]

35. The extremely poor working and environmental conditions prevailing in most shipbreaking yards remain of great concern to the Special Rapporteur (see A/HRC/12/26). South Asian beaches are a regular destination for the disposal and dismantling of vessels, resulting in serious environmental damage and human rights violations and abuses. In 2017, it was estimated that 543 large ships, or 80 per cent of the worldwide total, had been dismantled on the beaches of Bangladesh, India and Pakistan. Unsafe conditions predominate; as of October 2018, at least 24 workers reportedly died while working in shipbreaking in South Asia, a statistic that does not include deaths, diseases and disabilities resulting from toxic exposures.

36. The Government expressed its commitment to promoting the safe recycling of ships by becoming the seventh country to ratify the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009.[20] In 2013, the European Union adopted a regulation on ship recycling,[21] increasing the requirements established through the Hong Kong Convention by requiring all ships calling at European Union ports to carry an inventory of hazardous materials and requiring European Union flagged ships to be dismantled only in accredited facilities. At the time of the Special Rapporteur's visit to Denmark, the European Union was conducting a second assessment in the first process of accreditation of shipyards worldwide.

37. Danish shipping companies have repeatedly indicated their willingness to ensure the safer dismantling of their ships. Notably, in 2006, Maersk abandoned the practice of exporting ships to South Asian beaches for recycling, effectively prohibiting the practice of beaching. In 2016, however, the company reversed that position, resuming the selling of vessels for dismantling on the beaches of Alang, India, where ships continue to be dismantled under deplorable conditions.

38. Explaining their decision to return to the selling of ships for dismantling in Alang, representatives of Maersk and Danish Shipping emphasized to the Special Rapporteur the slowness of the evolution of the international regulatory framework, which placed the companies at a competitive disadvantage, and a lack of definition of the European Union accreditation process. They indicated that the yards selected in Alang had greatly improved their ability to dismantle ships without contaminating the area, as well as their working conditions. They explained that the decision to return to the area had been made only after the verified adoption of safety requirements and that the intent had been to promote

[18] Danish Shipping, "Danish shipping: Facts and figures", December 2017.

[19] Statista, "Leading ship operator's share of the world liner fleet as of October 30, 2018".

[20] The Convention will enter into force 24 months after ratification by 15 States, representing 40 per cent of world merchant shipping by gross tonnage, combined maximum annual ship recycling volume not less than 3 per cent of their combined tonnage.

[21] Regulation (EU) No. 1257/2013 of 20 November 2013, *Official Journal of the European Union*, No. L 330/1.

progress in those difficult areas.[22] In March 2018, Maersk adopted what it called a "responsible ship recycling standard" with the express intent of ensuring that ships are decommissioned in accordance with human rights, labour and environmental standards. During the Special Rapporteur's mission to Denmark, Maersk stated that it did not have any environmental monitoring data. Through that process, a group of four shipyards in Alang received a statement of compliance for ship recycling facilities following audits conducted by the ship classification society ClassNK at the request of the industry.

39. Several concerns were raised by civil society organizations regarding the decision. It was noted that there were only 4 accredited shipyards in an area with more than 110 other facilities side by side. No accurate environmental data were available to confirm improvements because an abundant amount of malpractice remains around the accredited facilities. In addition, the access of relevant civil society organizations is strictly limited, and only a few pre-arranged visits with the full control of the companies involved were promoted.[23] Lastly, an independent investigative media and research organization made an unannounced visit to an accredited yard in Alang just after Maersk had sent its first vessels back to one of the yards considered to be improved. It reported that, contrary to what the companies had stated, parts of ships were still in direct contact with the beach and working conditions were clearly inadequate, with workers exposed to serious risks.[24]

40. The Special Rapporteur remains seriously concerned about the decision to return to Alang and the obvious social and environmental risks involved. While recognizing the importance of the accreditation efforts, he underlines that they should not replace official assessments. In the view of the Special Rapporteur, ClassNK is not sufficiently independent or balanced to address the issues at hand: its Administrative Council, Board of Directors, auditors, Technical Committee and Marine Committee are all directly or indirectly appointed from among shipowners, shipbuilders, manufacturers of marine machinery and equipment and others.[25] The credibility of the efforts is also damaged by the inability of the companies to persuade owners of the improved shipyards to authorize independent visits by civil society organizations, justifying their lack of transparency with a claim that negative reporting by non-governmental organizations had scared the owners.

41. The dismantling of the vessel *North Sea Producer*, jointly owned by Maersk and Brazil-based Odebrecht, provides further insight into the extremely poor human rights-related due diligence processes still in place in the shipping sector. The vessel was sold by Maersk and Odebrecht in April 2016 in the United Kingdom of Great Britain and Northern Ireland, while local authorities were informed by the owners that it was being purchased by a company based in Saint Kitts and Nevis, Conquistador Shipping Corporation, for use in Nigeria. After leaving Europe, however, the vessel was beached in Chittagong, Bangladesh, after being sold locally by Global Marketing Systems, a company involved in trading ships for dismantling on South Asia beaches. Radioactive residues were found in the ship while it was being dismantled in Chittagong, without even minimal protection. As a result of the contamination, the dismantling was halted, and investigations were begun in 2017 in Bangladesh and the United Kingdom. Civil society groups and the media reported that the owners had been aware that a company specializing in recycling was the actual purchaser of the ship, the sale to the Saint Kitts and Nevis company for further use was not real and the owners had failed to inform the authorities thereof.

42. The Special Rapporteur is particularly troubled by the reluctance of Maersk to engage in dialogue on the aforementioned episode. During his visit, company representatives indicated that only the joint venture North Sea Producer Company, which existed solely to administer the dismantled vessel, was capable of sharing information on the issue. In response to a communication on the same case sent by the Special Rapporteur

[22] Danish Shipping, "Alang is not just Alang", 7 May 2015.

[23] NGO Shipbreaking Platform, "Platform news — the new lobbyist of beaching, Maersk, ignores concerns of environmental and human rights experts", 6 October 2016.

[24] Claus Nordahl and Louise Maria Skotte Møller, "Maersk and the hazardous waste", Danwatch, 13 October 2016.

[25] See www.classnk.com/hp/en/about/organization/index.html.

and the Working Group on business and human rights, Maersk, signing as North Sea Producer Limited, vehemently denied knowing that the ship had been purchased to be scrapped and stated that it had believed the buyer would abide by clauses requiring responsible recycling of the vessel imposed in the context of the sale. Contradicting Maersk in responding to the same letter, and making no reference to the subsequently inoperative Conquistador Shipping, Odebrecht indicated that the ship had indeed been sold to Global Marketing Systems.[26]

43. The aforementioned episode underlines the considerable challenges of ensuring accountability in cases of beaching and the insufficient cooperation on the part of the private sector in that regard. Danish officials and industry representatives responded to the concerns raised by the Special Rapporteur by making constant references to the need to move ahead with the ratification of the Hong Kong Convention and to the lack of advancement of other States and the global industry. It is widely recognized, however, including by the same interlocutors, that the levels of protection established in the Hong Kong Convention are insufficient (see A/HRC/12/26, para. 62). This enables various actors to undermine the provisions of the Basel Convention that prohibit practices permitted in the Hong Kong Convention. It seems that the creation of the Hong Kong Convention has allowed for the continuation of abuse of South Asian workers and communities by the shipping industry, including Maersk. Even if industry initiatives to promote some level of self-regulation could be regarded as positive, they must not replace more robust efforts and the existing obligations of States and businesses under international law. It is crucial to recall that the Basel Convention is in force, with near universal ratification, and is still a source of the clear duties and responsibilities regarding the export of hazardous vessels for dismantling.

44. The States in which beaching is practiced have an obligation to ensure the protection of human rights in those locations. Nevertheless, Denmark, as well as other States hosting companies that are circumventing global obligations in order to dispose of their vessels under inadequate conditions, also has a duty to prevent such well-documented abuses. The inability of the Government and companies of Denmark to ensure more rapid improvement of the norms and practices relating to shipbreaking is particularly disturbing given that so much progress has been achieved with respect to protection from hazardous substances through dialogue between Danish authorities and companies operating in other sectors.

F. Extraterritorial impacts of pesticide exports

45. Taking into consideration the very advanced initiatives developed by Denmark in the protection of Danish workers and their communities from the harmful effects of toxic chemicals, in particular pesticides, the Special Rapporteur is disturbed by the lack of attention to the continued export of hazardous pesticides banned by Denmark to countries that have lower levels of protection from the adverse impacts of such pesticides on such rights as the human right to health. In some cases, products produced with the banned pesticides and other toxic chemicals can be imported back to Denmark.

46. Denmark-based Cheminova A/S is one of the main producers of one such substance, the insecticide malathion. Evidence is publicly available on the serious risks posed by malathion to the environment, in particular to water sources and biodiversity, as well as to human health.[27] In an analysis conducted in 2016 by the International Agency for Research on Cancer of the World Health Organization,[28] it was concluded that malathion is probably carcinogenic in humans, while strong evidence was identified that exposure to malathion-based pesticides is genotoxic. For these reasons, malathion use is restricted in the European Union. Nevertheless, as recently as 2017, Cheminova exported malathion to more than 40

[26] See joint allegation letter, case No. OTH 6/2018. Available at https://spcommreports.ohchr.org/TMResultsBase/DownLoadPublicCommunicationFile?gId=23623.

[27] See www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC32924

[28] International Agency for Research on Cancer, "Malathion", *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, vol. 112 (January 2017).

countries outside the European Union.[29] In 2015, the Special Rapporteur expressed his concerns about the extreme impacts on the rights to food and water and on the livelihoods of communities after 500–1,000 kg of fish were killed in the La Pasión River, in Petén, Guatemala, reportedly owing to the heavy contamination of local waters with malathion (see A/HRC/31/79, case No. GTM 4/2015). Cheminova's practices in countries with weaker normative frameworks have been criticized.[30]

47. The exposure of communities and workers in States with weaker regulations to chemicals banned in Europe is an unacceptable exploitation of double standards (see A/HRC/33/41/Add.2, A/HRC/36/41 and A/HRC/34/48). As previously mentioned, additional legal instruments should be considered in Denmark in order to ensure that companies respect human rights in all of their operations and conduct human rights due diligence in relation to their national and international operations and supply chains, always using the highest levels of protection when operating in different jurisdictions.

III. The situation in Greenland

A. Legal and institutional framework of self-government

48. In 1953, Greenland became an integral part of the Danish Realm. Over the decades, its autonomy gradually expanded. The legal and institutional autonomy of the Greenland self-government is currently stipulated by the Act on Greenland Self-Government of 21 June 2009, in which it is recognized that the people of Greenland have the right to self-determination, the fields of responsibility and competences that Greenland can assume are described, and a new economic arrangement between Denmark and Greenland is introduced (see A/64/676, annex I).

49. Pursuant to the 1978 Greenland Home Rule Act, Greenland has already assumed legislative and administrative responsibility in a substantial number of fields, including the environment (except for the marine environment). Several areas, including the Constitution and foreign, security, defence, foreign exchange and monetary policy, cannot be assumed by the Greenland self-government owing to the Constitution of Denmark. The Act on Greenland Self-Government contains a comprehensive set of rules and regulations concerning cooperation between the Governments of Denmark and Greenland; Greenland must be consulted before the ratification of international agreements of specific relevance to Greenland.

50. Cooperation between the Governments of Denmark and Greenland also includes matters of foreign policy and military activity in Greenland. Greenland has established representation in Danish Embassies in countries and institutions of specific interest. Two members of the Parliament of Denmark represent Greenland. Most human rights treaties recognized by Denmark apply in Greenland, and the Government of Greenland submits reports to international human rights mechanisms. The mandate of the Danish Institute for Human Rights as a national human rights institution extends to Greenland. In 2013, Greenland established its own Human Rights Council, which it funds with the resources of that country and which cooperates with the Danish Institute for Human Rights. Local authorities have demonstrated great interest in strengthening existing mechanisms and maintaining regular collaboration with civil society.

51. A number of international environment-related conventions, including the Basel Convention, apply to Greenland. At the time of writing of the present report, Greenland had not informed Denmark that the Aarhus Convention would be applicable in Greenland.

[29] European Chemicals Agency, Export notifications database. Available at https://echa.europa.eu/information-on-chemicals/pic/export-notifications.

[30] Michael Søgaard Jørgensen and Bruno Milanez, "Pesticide export to institutionally vulnerable countries, who is responsible? An assessment of the practices and strategies of a Danish company in Brazil", paper presented at the International Symposium of Engineering Education, 19 and 20 July 2012.

Taking such a step would enhance the commitment of both countries to realizing the rights to information, meaningful participation and access to justice where there is a risk of exposure to hazardous substances and wastes.

52. The Ministry of Nature and Environment is charged with most of the responsibilities relevant to protection from hazardous substances and wastes. Within the Ministry, the Department of Environment and Contingency Management is the main authority managing the control of pollution, providing environmental permits and monitoring the implementation of regulations regarding pollution and waste. Within the same Ministry, the Environmental Agency for Mineral Resource Activities is the entity mandated to oversee the environmental impact of mineral-related activity.

B. Pollution of the Arctic environment and climate change

53. The Arctic region is affected in particular by global pollution. Several studies indicate that the region has been exposed to global pollution, with possible significant negative consequences for the health of the population of Greenland and other Arctic populations, including indigenous peoples.

54. Persistent pollutants were found in the Arctic region in the 1950s. The region receives disproportional amounts of pollutants, naturally transported northward from distant sources and deposited in Arctic ice. The vast majority of the toxics do not originate in the Arctic and, owing to their effect on human health and the environmental risks involved, and toxics were banned or restricted several decades ago.[31]

55. Serious concern is drawn to the issue of pollutants as a violation of the rights of the indigenous peoples of the Arctic region, in particular in contravention of article 29 of United Nations Declaration on the Rights of Indigenous Peoples prohibiting the storage or disposal of hazardous materials in their lands or territories without their free, prior and informed consent. Furthermore, the pollutants pose a clear risk to myriad other rights of indigenous peoples, including the rights to life, health, physical and mental integrity and self-determination, among others.[32] Global efforts to reduce exposure to such toxics, such as the Stockholm Convention on Persistent Organic Pollutants, are vital to protecting Arctic populations from "toxic trespass", or exposure without their prior informed consent. Nevertheless, existing global treaties on toxic chemicals do not ban or regulate the use or emission of many toxic chemicals that eventually contaminate the Arctic.

56. In a recent study,[33] it was confirmed that the frozen environment of the Arctic cryosphere has become a "reservoir of toxic chemicals". As climate change contributes to the melting of the ice sheet, the remobilization of the chemicals into the Arctic region, and thus the global environment, is under way. In another recent study, the Arctic Ocean was called a "dead end for floating plastics", and it was indicated that drifts of floating plastic, and their toxic constituents, dumped into oceans in other regions over the years are accumulating in polar latitudes.[34]

57. Concerns exist regarding the high level of contamination of traditional food sources in communities in Greenland. It has been reported that a wide spectrum of substances — industrial chemicals, pesticides, heavy metals and radionuclides — that reach high levels in the Arctic ecosystem have a great impact on marine mammals, which form an important part of the traditional Inuit diet, as contaminants are biomagnified up the food chain.[35] Such

[31] Banned toxics include the highly hazardous pesticides dichlorodiphenyltrichloroethane, aldrin and dieldrin and the toxic industrial chemicals polychlorinated biphenyls and hexachlorobenzenes.

[32] United Nations Declaration on the Rights of Indigenous Peoples, arts. 3, 7, 17, 21, 22 and 24.

[33] Aviaja L. Hauptmann and others, "Contamination of the Arctic reflected in microbial metagenomes from the Greenland ice sheet", *Environmental Research Letters*, vol. 12, No. 7 (July 2017).

[34] Andrés Cózar and others, "The Arctic Ocean as a dead end for floating plastics in the North Atlantic branch of the Thermohaline Circulation", *Science Advances*, vol. 3, No. 4 (19 April 2017).

[35] Inuit Circumpolar Council, "Food security across the Arctic", background paper of the Steering Committee of the Circumpolar Inuit Health Strategy, Canada, May 2012.

disproportional exposure is associated with risks to human health. In a recent study,[36] markedly higher levels of persistent pollutants were found in individuals who had the highest intake of traditional Inuit food, indicating a possible relationship between exposure to such pollutants and the prevalence of inflammation affecting the health of local communities. In another recent case study in that country, significant links between the risk of breast cancer and certain classes of toxic chemicals were identified and it was concluded that exposure to such pollutants could be a factor in increasing the risk of breast cancer in Inuit women.[37]

58. As a consequence of research findings, authorities in Greenland have promoted information campaigns to reduce risks in the traditional diet, in particular for pregnant and breastfeeding women. Identifying alternative food options in the local ecosystem is clearly a challenge. The Special Rapporteur underlines the need to continue to invest in research on the consequences of Arctic pollution, the relevance of ensuring access to information and the importance of developing a protocol to test for heavy metals in domestic foodstuffs, in addition to developing alternative dietary options. The Arctic Monitoring and Assessment Program has for many years been a source of information on pollution levels in Greenland and the Arctic.

59. Climate change has been found to potentially modulate the impact of exposure to toxic pollutants, but, owing to various uncertainties regarding the effects of climate change on health, it is not possible to make reliable risk and impact assessments, and a stricter application of the precautionary principle is required. Climate change, including increasing climate variability, may affect primary and secondary emissions of persistent pollutants in the Arctic region, potentially offsetting the efforts undertaken under the Stockholm Convention to reduce the emission of persistent organic pollutants, thereby increasing the risks relating to their harmful effects on human health.[38] Climate change is also increasing options for navigating around the island, as the frosting of some areas becomes infrequent. The increase in navigation brings with it other stressors; for example, ships discharging ballast water into the Arctic Sea may introduce invasive species that could outcompete resident species. Increased opportunities for navigation also expand fishing opportunities. The fishing industry is, in fact, a pillar of the economy of Greenland, and reports have been shared with the Special Rapporteur on the overfishing of some species, such as salmon[39] and Greenland halibut.[40]

60. Greater attention to the impact of pollution in the Arctic is needed urgently. The Special Rapporteur recognizes that Greenland suffers from the effects of global pollution and is of the view that it should therefore expand its involvement in the demand for global action to speedily improve the management of hazardous substances and wastes. Even if there are no major sources of mercury in Greenland, mercury contamination is a key source of concern regarding the diet of traditional communities. Therefore, the Government of Greenland should consider a decision to lift the reservation of application of the Minamata Convention on Mercury to Greenland.[41]

C. Military activities

61. The Government of Denmark has competence in matters of defence, but is to consult and cooperate closely with the Government of Greenland on foreign and security

[36] Louise K. Schæbel and others, "The influence of persistent organic pollutants in the traditional Inuit diet on markers of inflammation", *PLOS ONE*, vol. 12, No. 5 (19 May 2017).

[37] Maria Wielsøe and others, "Serum levels of environmental pollutants is a risk factor for breast cancer in Inuit: a case control study", *Environmental Health* (2017).

[38] United Nations Environment Programme and the Arctic Monitoring and Assessment Programme Expert Group, "Climate change and POPs: predicting the impacts", report prepared for the Conference of the Parties to the Stockholm Convention, Geneva, 25–29 April 2011.

[39] See www.nasco.int/wgc_measures.html.

[40] World Wide Fund for Nature, "Much at stake in Greenland halibut overfishing", 25 August 2017.

[41] Victoria Herrmann, "Making mercury history? Greenland chooses to opt out of historic UN Convention", *High North News*, 28 August 2017.

affairs of particular importance to Greenland, in accordance with the 2003 Itilleq Declaration. Agreements signed between Denmark and the United States of America in 1941 and 1951 allowed the United States to build a number of bases and radar stations in Greenland. The establishment of Thule Airbase, in 1953, was particularly traumatic because authorities in Denmark forcibly relocated the inhabitants of the village of Uummannaq to other villages in the area. The case was the object of national litigation, and villagers were awarded financial compensation. The United States presence decreased significantly over the years, and successive agreements between Denmark and the United States have resulted in the return of military facilities, with the exception of Thule Airbase, to control by Denmark.

62. The lack of participation of the authorities in Greenland in past agreements adopted by the forces of Denmark and the United States and the protracted unwillingness of those authorities, until recently, to perform comprehensive clean-ups of sites following United States military activities and abandoned United States military sites have fuelled debates on the responsibility for such clean-ups and for the monitoring and safeguarding of corresponding landfills. The difficulty of clarifying the extent, location and type of waste and the resulting inability to provide meaningful risk assessments to communities living and hunting in the affected areas have fuelled a sense of resentment and frustration on the part of Greenlanders. The Government of Denmark informed the Special Rapporteur that it had financed various impact assessments.

63. In recent years, concern over hazardous wastes left behind by the United States military has increased in Greenland. In a 2016 report on the situation on the United States Camp Century base beneath the surface of the north-western Greenland Ice Sheet, it was estimated that tons of toxic waste, including polychlorinated biphenyls and radioactive material, could have been exposed owing to thawing ice resulting from climate change.[42] The base was decommissioned in 1967, following a study conducted on the feasibility of deploying ballistic missiles within the Ice Sheet. The Government of Denmark, in cooperation with the Government of Greenland, initiated several studies to assess the remaining waste at Camp Century, including a programme for long-term climate monitoring, a survey of the debris field and measurements of radioactivity in ice samples.

64. The Special Rapporteur was informed that the United States Government was of the view that the agreement with Denmark excluded it from any liability relating to the cleaning of debris remaining after military activity conducted in Greenland. Greenlanders, for their part, are exerting pressure on the authorities in Denmark to address the impact of activities conducted for years in their territory without their consent, control or participation. Nevertheless, interlocutors informed the Special Rapporteur that the United States had financed an arrangement with the Greenland Home Rule Government regarding the abandonment, demolition and clean-up of certain bases on the basis of agreements between the Governments of the United States and Denmark, including Greenland. The authorities in Denmark granted a mutually agreed financial contribution to the Home Rule Government for the environmental clean-up of Dundas when the area was given up by the United States at the request of the Home Rule Government.

65. Controversy marked the implementation of military activities, owing in particular to the difficulty of gaining access to information on the full nature of the operations implemented by United States forces. Concerns existed, for example, about the impact of contamination generated by the crash of a United States Air Force B-52 bomber loaded with nuclear weapons near Thule Airbase. Owing to a high level of confidentiality, a controversy emerged over the potential risk caused by an unaccounted-for unexploded device allegedly left in the area, but in a study by the authorities in Denmark,[43] that hypothesis was discarded. Workers involved in the clean-up operation claimed that long-term health problems resulted from their exposure to radiation and legally challenged the

[42] William Colgan and others, "The abandoned ice sheet base at Camp Century, Greenland, in a warming climate" *Geophysical Research Letters*, vol. 43, No. 15 (16 August 2016).

[43] Svend Aage Christensen, *The Marshal's Baton*, DIIS report 2009:18 (Copenhagen, Danish Institute for International Studies, 2009).

Government of Denmark for allegedly failing to monitor the health-related consequences of their exposure to hazardous substances. Joint studies conducted by the Danish health authorities and the Greenland Home Rule Government did not identify any specific health consequences.

66. In January 2018, the authorities in Denmark and Greenland signed an agreement to promote the clean-up of American military installations. The deal, which earmarked 180 million krone over six years for the clean-up, followed an agreement adopted in February 2017 for the monitoring and gauging of risks associated with Camp Century and the reported retraction of the covering ice cap. Regarding Camp Century, the Government of Greenland does not necessarily consider these studies and projects to be sufficient and reiterates that it does not assume legal responsibility for the detection, investigation or clean-up of pollution, including radioactivity, in the area.

67. The Special Rapporteur recognizes the efforts made to assess the impact of the military waste and the commitment of Denmark to supporting the clean-up. Full transparency is crucial in order to dissipate the tensions that have emerged over years of covert operations. Regardless of the ultimate attribution of responsibility to the forces of Denmark and the United States, States must ensure the disposal of contaminated war debris, unexploded ordnance and military equipment in a manner consistent with international standards (see also A/HRC/5/5). Nevertheless, Greenlanders have raised concerns at meetings regarding the continued use of the island in defence efforts, including as part of an anti-missile shield.

68. The Special Rapporteur was informed of concerns regarding the impact of debris left behind from rocket launches in the Arctic Sea. In 2017, Inuit in Greenland protested[44] the launch of satellites by the European Space Agency as the debris potentially containing significant quantities of unburned hydrazine fuel fell on an area of vital hunting sources.[45] Inuit in Greenland complained about not having been informed of the launches and noted the significant risks associated with those activities. In a recent study, attention was drawn to the fact that, since 2002, the Russian Federation had, on at least 10 occasions, dropped rocket stages fuelled with unsymmetrical dimethylhydrazine into the Barents Sea and the North Water Polynya without regard to the significant risks posed by those activities. It was noted that not all of the fuel on board is consumed during a launch and that residual fuel can pollute large areas. The health consequences of unsymmetrical dimethylhydrazine exposure for United States aerospace workers has been documented in scientific literature.[46] In another study, conducted in Kazakhstan, serious health consequences for children and adults were noted in areas where similar rockets were frequently used.[47] The Special Rapporteur fully concurs with calls to avoid using unsymmetrical dimethylhydrazine-fuelled rockets until their safety is fully demonstrated.

D. Mining initiatives

69. The extraction of minerals is regarded as one of the main potential sources of economic expansion in Greenland and viewed by some interlocutors as critical for full independence from Denmark. Nevertheless, significant concerns exist regarding the environmental and social impact of those activities. Investment in mineral-related activities has reportedly slowed in recent years owing to a general decrease in the price of commodities, making investment in remote areas less attractive.

[44] Inuit Circumpolar Council, "ICC Pikialasorsuaq Commission calls for postp nement of Russian rocket launch", press release, 5 October 2017.

[45] Tiff-Annie Kenny and Tad Lemieux, "Latest rocket launch renews concern , over Inuit food security", The Conversation, 25 April 2018.

[46] Beate Ritz and others, "Chemical exposures of rocket-engine test-stand personnel and cancer mortality in a cohort of aerospace workers", *Journal of Occupational and Environmental Medicine*, vol. 41, No. 10 (October 1999).

[47] United Nations Development Programme, *Environment and Development Nexus in Kazakhstan* (Almaty, LEM Printhouse, 2004).

70. Most mining projects are still in their embryonic stage. Special concerns exist, for example, regarding a mine for rare earth elements, zinc and uranium in Kvanefjeld, near Narsaq. Worldwide experience has illustrated that such mining projects are associated with a wide range of potential adverse human health and societal risks. In addition to posing risks to workers, the Kvanefjeld mine could potentially contaminate and otherwise disturb areas used by the local community, for example sheep farms. Depending on the dimensions of the projects considered, an influx of migrant or temporary workers may be required. Special measures must be taken to ensure oversight of working conditions and to promote their integration into local communities. The authorities' ability to ensure the future close monitoring of waste and tailings dumps might be another source of concern, considering, in particular, the accumulated challenges associated with managing waste on the island.

71. The Mineral Resources Act, 2009, is the framework legislation for all activities relating to mineral and hydrocarbon exploration and exploitation. The adoption of the legal and institutional framework governing the mineral resources area, such as mining activities, in Greenland was one of the significant consequences of the adoption of the Act on Greenland Self-Government in 2009.

72. The Mineral Resource Authority, which comprises the Mineral Licence and Safety Authority and the Environmental Agency for Mineral Resource Activities, is responsible for all matters relating to mineral resources. The Authority may grant exploration licences for 10 years, with the possibility of renewal for an additional 3 years at a time, and exploitation licences, once an economically feasible deposit has been determined through exploration, for 30 years. A licence for approval of a mineral activity can be granted only after an environmental impact assessment has been made or a social sustainability assessment has been conducted.

73. Over the years, authorities have adapted the procedures for environmental and social impact assessments with the aim of ensuring greater transparency and participation. Environmental licensing occurs through the Environmental Agency for Mineral Resource Activities, which operates under the Ministry of Nature and Environment. The Agency cooperates closely with the Danish Centre for Environment and Energy and the Greenland Institute of Natural Resources (Pinngortitaleriffik) to secure independent scientific advice. Detailed guidelines[48] were drawn up, then updated in 2015 with public consultation, to guide the process of preparing a social impact assessment and ensure meaningful participation. The processing of an application is expected to take from 4 to 12 months, during which at least two public consultations are required. Information on the entire process is to be made available online. Guidelines have also been drawn up for preparing an environmental impact assessment.

74. The authorities have underscored their commitment to ensuring the prior and informed consent of those affected by mining projects, and the evolution of the norms regulating licensing seems to reflect that position. Nevertheless, challenges remain regarding ensuring wide access to information and meaningful participation. The Special Rapporteur was informed that the time allotted for pre-consultations was unrealistic, considering the complexity of ensuring the meaningful participation of communities living in remote locations. Difficulties also reportedly exist in the translation into Greenlandic of documents containing complex technical information and in informing all communities concerned. Recent assessments have also revealed issues such as a lack of systematic evaluation of the former and present extractive projects and the challenges of creating spaces for participation in an atmosphere where people feel comfortable talking about issues that may be sensitive to them, because mining projects can often divide communities.[49] In another assessment, it was indicated that public participation in the decision-making process is still impaired by a lack of public access to the draft

[48] Greenland, Ministry of Industry, Labour and Trade, *Social Impact Assessment (SIA): Guidelines on the process and preparation of the SIA report for mineral projects* (Nuuk, Greenland, 2016).

[49] Anne Merrild Hansen and Rachael Lorna Johnstone, "Improving public participation in Greenland extractive industries", *Current Developments in Arctic Law*, vol. 5 (2017).

environmental impact assessment.[50] A comparison of two different mining licensing processes has revealed that capacity-related concerns in particular affect projects of greater scale.

E. Challenges of waste management

75. The overall planning of waste management throughout Greenland is a responsibility of the Government of Greenland, while municipalities can plan and implement local waste systems. The main norms for waste management are the Parliament of Greenland Act No. 9 of 22 November 2011 on the protection of the environment and the Greenland Home Rule Proclamations No. 28 of 1993 on the disposal of waste and 29 of 1993 on oil and chemical waste.

76. Greenland faces major and unique environmental challenges in the management of waste. It is a large land mass with disparate communities and a lack of connecting roads, which means that much of its waste is transported exclusively by boat or airplane. A large volume of plastic waste is generated by the packaging of imported goods. In recent evaluations,[51] it was noted that most of the waste in Greenland is disposed of in open dumps or burned in simple, small-scale incinerators, which release toxic chemicals, such as dioxins, that accumulate in ice, food and people, resulting in a call for improvement. Concerns also exist regarding waste management and the rights to water and sanitation. Bucket toilets and the discharge of wastewater into the ground or open sewers are problematic issues with potential consequences for the environment and health.

77. Investments were recently made to improve waste management in more populated areas. The Special Rapporteur was informed of the efforts of the local authorities in Ilulissat and Nuuk, who recognized the need to tackle the backlog from previous years and abandon the practice of using landfills and open-air incineration. Greenland aims to expand economic activity by investing in the tourism and mining sectors; in planning such efforts, consideration must be given to the urgent need to improve waste management.

IV. Conclusions and recommendations

A. Denmark

78. **The rich experience of Denmark in promoting the right to the highest attainable standard of health by reducing toxic exposures can serve as a valuable resource for other countries. Denmark has advanced research, public awareness and participation simultaneously to promote the development of laws and policies to improve health by enhancing protection from toxic exposures. Noting increasing deregulatory pressures at home and abroad, which are causing or threatening a departure from established protections, the Special Rapporteur believes that the leadership of Denmark is needed now more than ever to protect people from toxic chemicals and urges the Government to redouble its efforts in that regard.**

79. **A human rights-based approach to protection from toxic exposure requires particular attention to the exposure of sensitive, at-risk and vulnerable groups and deficiencies in the protection of the rights of such groups. The efforts of Denmark to protect children from toxic exposures, in particular to chemicals that interfere with children's healthy development, are commendable.**

[50] Maria Ackrén, "Public consultation processes in Greenland regarding the mining industry", *Arctic Review on Law and Politics*, vol. 7, No. 1 (2016).

[51] Rasmus Eisted and Thomas H. Christensen, "Environmental assessment of waste management in Greenland: current practice and potential future developments", *Waste Management and Research*, vol. 31, No. 5 (May 2013).

80. **Nevertheless, challenges remain, in particular regarding the impact of Danish businesses in foreign territories. Those extraterritorial concerns are evident in the shipbreaking industry and in the export of hazardous pesticides banned by Denmark to countries with lower standards of protection for workers and communities at risk. The Government has paid insufficient attention to the toxic impact of Danish businesses on the rights of people outside of Denmark. The Special Rapporteur was struck by the lack of attention on the part of the national human rights institute and equitable trade initiatives to the extraterritorial impacts of Danish businesses on people living outside of Denmark with respect to toxic exposures. This is particularly striking against a background of achievement in reducing exposures to toxics both within Denmark and in Europe.**

81. **In that regard, the Special Rapporteur makes the following recommendations:**

(a) **Denmark should continue its efforts to prevent exposure to hazardous substances and increase its efforts to protect the right to health and protect others from toxic exposures by doing the following:**

- **Explicitly linking its efforts to develop a non-toxic environment to the realization of all human rights threatened by toxic exposures**
- **Strengthening internal collaboration among experts on exposure to toxic substances and human rights experts, including reporting under United Nations human rights instruments**
- **Developing a stronger, more comprehensive and ambitious global regime to minimize exposure to toxic substances and prevent the abuse of human rights in lower-income countries. Such a regime should redefine substances of global concern to include those used in international supply chains; subject chemicals of global concern to legally binding requirements on the basis of the human rights obligations of States; include a periodic review for monitoring States' performance with outputs of the process sent to the Committee on the Rights of the Child regarding the realization of article 24; create a non-binding policy framework through which to raise and discuss truly emerging issues; and require States to compel businesses to perform human rights due diligence regarding the impacts of toxic substances throughout the life cycle of their product and supply chains**

(b) **Denmark should ensure that businesses in its territory or under its jurisdiction respect human rights by:**

- **Requiring them to conduct human rights-related due diligence to identify, monitor, assess and address any abuses of human rights relating to toxic substances. The requirement should cover impacts that such businesses cause, contribute to or are linked to, in Denmark or abroad, in relation to their national and international operations and throughout their supply chains**
- **Increasing its cooperation with foreign Governments in areas where there are commercial relations with Danish businesses, in particular shipbreaking and agriculture**

(c) **Denmark should ensure that its laws provide for jurisdiction over foreign cases of impacts due to hazardous substances and should assert jurisdiction over corporate abuse of human rights abroad due to toxic exposures, including criminal sanctions, where appropriate;**

(d) **Denmark should consider ratifying the Optional Protocol to the International Covenant on Economic, Social and Cultural Rights and the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families;**

(e) **A stronger, comprehensive global regime regarding toxic chemicals is required to protect those most at risk of exposure to substances that pose risks to life and health, including workers, low-income communities and children, among others, and to prevent businesses from exploiting lower standards of protection and weaker governance structures in certain countries.**

B. Greenland

82. **As Greenland has increased its governance-related autonomy, concerns about the management of wastes and hazardous substances have emerged. Greenland faces significant challenges in establishing a reliable system of pollution control and waste management; the small population distributed over a vast territory and the Arctic climate pose significant challenges for authorities. The Special Rapporteur is pleased to note the commitment of the authorities in Greenland to paying attention to human rights obligations while promoting mining opportunities. Considering the significant risks posed by some activities, greater capacity among environmental officials might be needed to ensure that standards are implemented. Special concerns exist regarding high levels of contamination by a wide range of substances in the traditional food sources of communities in Greenland. The substances include synthetic chemicals, heavy metals and radionuclides that migrate northward to the Arctic ecosystem, accumulating in foods in the Inuit diet and contaminating water and ice. The Special Rapporteur underlines the injustice done to communities in Greenland and the Arctic through the contamination of the resources on which they depend by pollutants from foreign sources and calls for stronger international measures to protect their rights.**

83. **Concerns about the clean-up of waste accumulated over years of military activities can be dispelled only with the full support of all parties involved in those activities. Transparency is vital to building the trust needed to conclude that process effectively. Greenland is also particularly vulnerable to pollution originating in other parts of the world and therefore must have its voice heard by the international community when solutions to major environmental concerns are devised.**

84. **In that regard, the Special Rapporteur wishes to make the following recommendations to the Greenland self-government and to Denmark:**

(a) **The self-government should actively participate in global debates on the control of pollution. It is encouraged to strengthen interlinkages between climate change and conventions relating to toxic chemicals in order to enhance efforts to reduce exposure to toxics. Greenland should consider requesting Denmark to apply all relevant conventions, including the Minamata Convention and the Aarhus Convention;**

(b) **The self-government should ensure that information on pollution and adequate forms of waste management is made available and accessible to local communities, including potential options for reducing exposure to toxic substances;**

(c) **Denmark must identify and remove all military waste left in Greenland that is unwanted by the people of Greenland. The United States is strongly encouraged to engage and assist in that effort. Denmark and Greenland should significantly enhance the participation of the people of Greenland in decisions regarding the presence of foreign military forces in Greenland;**

(d) **Regarding participation and consultation relating to mining projects, the self-government is encouraged to reconsider the amount of time allotted to pre-consultations to allow the sufficient mobilization of communities living in remote locations. Additional resources should be directed towards the translation and wider dissemination of documents. The self-government should also address concerns regarding a lack of systematic evaluations of former and present extractive projects;**

(e) **While considering the accumulated challenges faced in managing waste on the island, the self-government is encouraged to upscale the monitoring of waste and tailings dumps and to ensure oversight of working conditions;**

(f) **The self-government should ensure that the promotion of economic expansion is constantly accompanied by efforts to improve the management of chemicals and waste systems. In that connection, the self-government should take concrete steps towards a circular economy, including by abandoning open-air landfills and the incineration of waste;**

(g) **Denmark should ensure that all countries neighbouring Greenland avoid launching unsymmetrical dimethylhydrazine-fuelled rockets that land near the territory of Greenland until their safety is fully demonstrated and assess the potential impact of pollution from previous launches.**